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JOURNAL  
OF THE  
*Arkansas* MEDICAL  
SOCIETY

June, 1980

Vol. 77 No. 1

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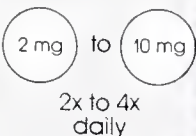
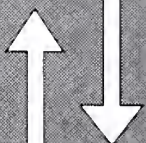
700934

# Monitoring patient response to Valium® (diazepam/Roche)

## Assessing initial response to therapy

During the first follow-up visit after initiating therapy, both physician and patient should determine if Valium (diazepam/Roche) is having the desired effect. Most patients will promptly report a feeling of relaxation and relief of anxiety-linked symptoms such as insomnia, headaches, palpitations and hyperventilation. You will probably observe that the patient is calmer and more relaxed. If, however, patient response does not measure up to expectations, a reevaluation of the patient's profile with modification of the dosage regimen should be considered.

## Making dosage adjustments

START	ADJUST
	

With any psychoactive medication it is good medical practice to initiate therapy at base dosage levels and titrate to the patient's needs. With Valium, experience has shown that 5 mg t.i.d. is usually sufficient although some patients with severe or persistent anxiety may require higher dosages initially. In geriatric or debilitated patients, the recommended dosage is 2 to 2½ mg once or twice daily.

When anxiety fluctuates, as is common with most patients, the dosage may be adjusted as needed during the course of therapy; three strengths in scored tablets give you unmatched flexibility and simplicity in individualizing dosage.

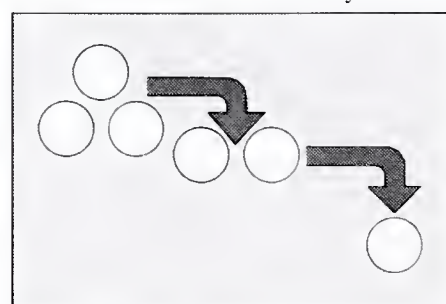
## Evaluating progress toward therapeutic goals

SET GOALS						
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

At the beginning of therapy it is now common practice for both physician and patient to establish treatment goals and to estimate the amount of time needed to achieve them. Then the patient knows what to expect and when to expect it.

Some physicians find that compiling a checklist of presenting symptoms and complaints is useful for assessing the patient's response from visit to visit. In this way, progress toward attainment of the therapeutic goal is reviewed at regular intervals. As patients feel their symptoms abate and begin to develop insight into the sources of their anxiety and psychic tension, the checklist can be expected to dwindle.

## Discontinuing pharmacologic intervention



When you decide to discontinue therapy, tapering dosage is good medical practice. Although rarely necessary after short-term treatment with Valium, gradual dosage reduction is advisable for patients who have been on extended therapy. This gradual discontinuance should preclude either recurrence of pretreatment symptoms or development of untoward side effects. Symptoms of withdrawal have almost always been associated with abrupt discontinuance of therapy at higher dosages taken continuously over long periods of time.

2-mg, 5-mg, 10-mg scored tablets  
**Valium®**  
diazepam/Roche

An Important Adjunct to Your Treatment Program for Excessive Anxiety



See the following page for a summary of product information.



# Valium® (diazepam/Roche) ®

**Before prescribing, please consult complete product information, a summary of which follows:**

**Indications:** Tension and anxiety associated with anxiety disorders, transient situational disturbances and functional or organic disorders, psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation, symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal, adjunctively in skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders, ataxia, stiff-man syndrome, convulsive disorders (not for sole therapy).

The effectiveness of Valium (diazepam/Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

**Contraindicated:** Known hypersensitivity to the drug. Children under 6 months of age.

Acute narrow angle glaucoma, may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported, should these occur, discontinue drug. Isolated reports of neutropenia, jaundice, periodic blood counts and liver function tests advisable during long-term therapy.

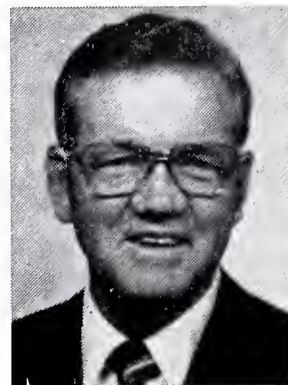
**Dosage:** Individualize for maximum beneficial effect. **Adults:** Tension, anxiety and psychoneurotic states, 2 to 10 mg b.i.d. to q.i.d., alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed, adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d., adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. **Geriatric or debilitated patients:** 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) **Children:** 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

**Supplied:** Valium® Tablets, 2 mg, 5 mg and 10 mg—bottles of 100 and 500, Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25, and in boxes containing 10 strips of 10, Prescription Paks of 50, available in trays of 10.



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NEWS—Our readers are requested to send in items of news, also marked copies of newspapers containing matter of interest to the membership.

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**Kemal Kutait, M.D.**  
**Fort Smith**  
**President**  
**Arkansas Medical Society**  
**1980-1981**



PROCEEDINGS

*104th Annual Session*

ARKANSAS MEDICAL SOCIETY

Hot Springs

April 20-23, 1980

**First Meeting  
HOUSE OF DELEGATES**

The first meeting of the House of Delegates of the Arkansas Medical Society during the 1980 convention was called to order at 1:30 p.m. by Speaker Amail Chudy. Invocation was by W. Payton Kolb.

The executive vice president, C. C. Long, called the roll of delegates. The following delegates, officers, and members seated as delegates by action of the House were present:

ARKANSAS, Gerald L. Guyer; BAXTER, John F. Guenther; BENTON, Richard N. Pearson, and Michael C. Reese; BOONE, Charles A. Ledbetter; CHICOT, H. W. Thomas; CLARK, N. R. Ritter; CLEBURNE, Max Baldrige; COLUMBIA, John Ruff; CRAIGHEAD-POINSETT, John Baldrige and James M. Robinette; CRITTENDEN, Milton D. Deneke; DREW, L. K. Austin; FAULKNER, Robert B. Benafield; GARLAND, Edgar Clardy and Ronald J. Bracken; GREENE-CLAY, Richard O. Martin and Larry Lawson; HEMPSTEAD, Lowell Harris; HOWARD-PIKE, U. Lee Smith; INDEPENDENCE, Jim Lytle; JEFFERSON, T. E. Townsend, Banks Blackwell and Horace Green; LAWRENCE, Ralph F. Joseph; LEE, Dwight W. Gray; LOGAN, William R. Daniel; LONOKE, Fred C. Inman; MILLER, F. E. Joyce; MISSISSIPPI, Eugene A. Shaneyfelt; MONROE, N. C. David, Jr.; OUACHITA, Cal R. Sanders; POLK, David D. Fried; POPE, Frank Lawrence and James Kolb, Jr.; PULASKI, Edgar Easley, Purcell Smith, A. Henry Thomas, Charles W. Logan, Robert F. Shannon, Guy Farris, George Mallory, Kelsy J. Caplinger, III, Gordon Oates, John Mc-

Collough Smith, Warren Boop, William L. Mason, George Mitchell, Ruth C. Steinkamp, James Weber, Harold D. Purdy, Douglas B. Smith, Warren M. Douglas, Jerry Holton and Thomas A. Bruce; SEBASTIAN, Carl Williams, Annette Landrum, Hugh Lewing, Ken Wallace, A. C. Bradford, McDonald Poe, and Morton C. Wilson; SEVIER, Wallace Dickinson; ST. FRANCIS, E. Morgan Collins, Jr.; UNION, Allan S. Pirniquie; WASHINGTON, Lee B. Parker and Spencer Albright; YELL, James L. Maupin, COUNCILORS: Merrill J. Osborne, Asa A. Crow, Paul Gray, John E. Bell, John Hestir, L. J. P. Bell, Raymond Irwin, John P. Burge, George Warren, J. B. Jameson, Jr., C. Lynn Harris, R. Jerry Mann, Robert F. McCrary, W. Ray Jouett, William N. Jones, Morris M. Henry, Rhys A. Williams, Charles F. Wilkins, and Ken Lilly; PRESIDENT, A. E. Andrews; PRESIDENT-ELECT, Kemal Kutait; FIRST VICE PRESIDENT, Paul Cornell; SPEAKER OF THE HOUSE, Amail Chudy; VICE SPEAKER, W. P. Phillips; SECRETARY, Elvin Shuffield; TREASURER, Kenneth R. Duzan; PAST PRESIDENTS, Joe Verser, C. R. Ellis, Ross Fowler, Robert Watson, John P. Wood, W. Payton Kolb and George F. Wynne.

George Warren, Chairman of the Credentials Committee, reported that a quorum was present.

Upon motion of Ken Lilly, the House approved the minutes of the 1979 meeting as published in the June 1979 issue of the Journal. The minutes of the winter meeting held November 18, 1979, were approved by the House upon the motion of George Warren.

Speaker Chudy recognized Joe Verser, Secretary of the Arkansas State Medical Board. On behalf





Kenal Kutait of Fort Smith, President of the Society for 1980-81, congratulates Purcell Smith, Jr., of Little Rock on his election to the position of president-elect of the Society.

of the State Board, Dr. Verser presented a memorial plaque to the widow of Mr. Eugene R. Warren expressing appreciation for the outstanding service of Mr. Warren as attorney for the Medical Board and the Society.

Vice Speaker W. P. Phillips introduced out-of-state Auxiliary guests who addressed the House.

Mrs. John F. Vaughan, Vancouver, Washington,  
President-elect of the American Medical Association Auxiliary

Mrs. Raymond M. Yow, Salisbury, Maryland,  
President of the Southern Medical Association Auxiliary

Speaker Chudy introduced State Auxiliary guests who addressed the House:

Mrs. Frank Morgan, North Little Rock,  
President of the Arkansas Medical Society Auxiliary

Mrs. Warren Boop, Little Rock, President-elect  
of the Arkansas Medical Society Auxiliary

Vice Speaker Phillips introduced Robert B. Hunter of Sedro Woolley, Washington, President-elect of the American Medical Association. Dr.

Hunter discussed the AMA at present and its future, as well as the profession of medicine. He reported on the result of the Voluntary Effort for Cost Containment. Dr. Hunter mentioned that the quality of care has improved, access to care has improved, and, of necessity, the cost of that care has increased accordingly. Physicians are concerned about the escalating cost of health care. He urged physicians to consider whether laboratory procedures, therapeutic procedures, etc., were cost effective in behalf of the patient. As "purchasing agent" for the patient, he stated that physicians must be cost effective in their practices. He stated that physicians must all work together as good citizens on the voluntary effort for cost containment for the benefit of the citizens and the country.

Speaker Chudy introduced the President of the Arkansas Medical Society, A. E. Andrews of Texarkana, and expressed appreciation to him for his strong leadership during the past year. The House gave Dr. Andrews a standing ovation. The address of the president appears following minutes of the meeting.

President Andrews presented a check in the amount of \$9,899.42 to Thomas A. Bruce, Dean of the University of Arkansas College of Medicine, on behalf of the American Medical Association Education and Research Foundation. The check represented an unrestricted grant to the college. In accepting the check, Dr. Bruce expressed thanks for the College to the Society's Auxiliary for their work in making the funds available.

Speaker Chudy called on executive vice president C. C. Long to present for final consideration the proposed amendment to the Constitution and Bylaws approved for first reading at the 1979 meeting. Dr. Long presented the proposal as follows:

It is proposed that Article VI of the Constitution, Council, Section 2, Composition of the Council, be amended to read as follows:

"The Council shall consist of the councilors, the president, first vice president, president-elect, secretary, treasurer, and immediate past president. The speaker and vice speaker of the House of Delegates and the past presidents shall be members ex-officio without vote; the immediate past president shall have a vote. There shall be two councilors from each councilor district to serve staggered terms of two years. All councilors shall have equal voting privileges. A



# Officers of the Arkansas Medical Society for 1980-1981

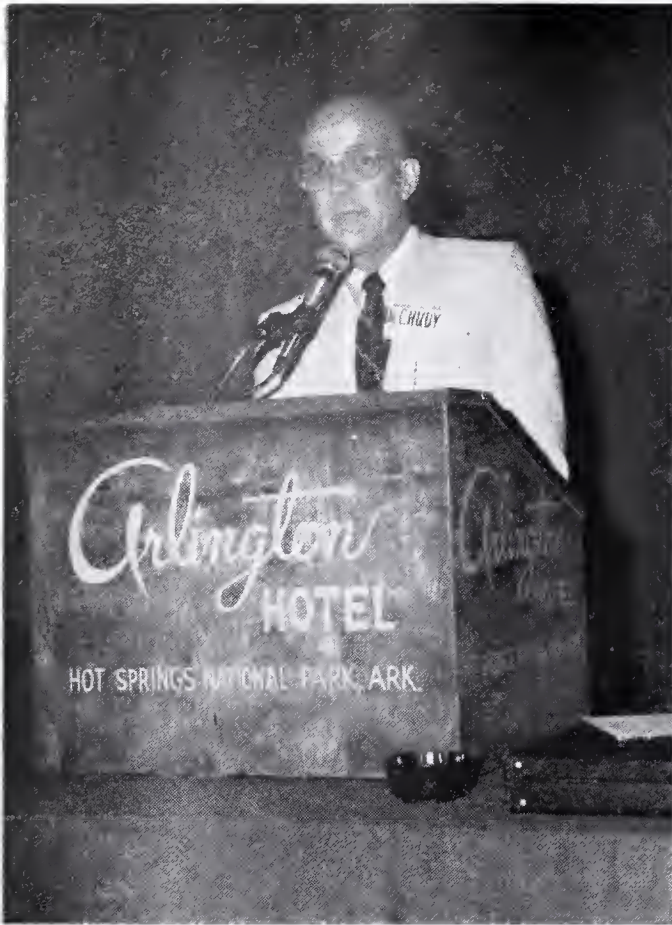


The principal officers of the Society for 1980-81 are (left to right) John P. Burge of Lake Village, Chairman of the Council; President Kemal Kutait of Fort Smith; President-elect Purcell Smith, Jr., of Little Rock; Elvin Shuffield of Little Rock, Secretary, and Kenneth R. Duzan of El Dorado, Treasurer.



Officers of the Society for the year are (left to right, front row) Purcell Smith, Jr., Little Rock, President-elect; John P. Burge, Lake Village, Chairman of the Council; Kemal Kutait, Fort Smith, president; Kenneth R. Duzan, El Dorado, Treasurer; and Elvin Shuffield, Little Rock, Secretary. Second row, left to right, Councilors Morris Henry of Fayetteville, Robert McCrary of Hot Springs, Asa Crow of Paragould, Jerry Mann of Arkadelphia, George Warren of Smackover, and past president A. E. Andrews of Texarkana. (third row, left to right) Past President C. R. Ellis of Malvern, Councilors John Bell of Searcy, Charles Wilkins of Russellville, Cal Sanders of Camden, Speaker Amal Chudy of North Little Rock, and Second Vice President Frank Morgan of North Little Rock. (back rows, left to right) Vice Speaker W. P. Phillips of Fort Smith, Councilors Ken Lilly of Fort Smith, Ray Jouett of Little Rock, Raymond Irwin of Pine Bluff, Lynn Harris of Hope, Rhys Williams of Harrison, L. J. Pat Bell of Helena, John Hestir of DeWitt, First Vice President Richard Martin of Paragould, Merrill Osborne of Blytheville, Third Vice President Harold Purdy of Little Rock and Councilor William Jones of Little Rock.





Amail Chudy, Speaker of the House of Delegates, presides at one of the business sessions of the House during the convention.

majority of the voting members shall constitute a quorum."

Vice Speaker Phillips requested a standing vote on the amendment. The amendment was unanimously approved.

The Chairman of the Constitutional Revisions Committee, A. S. Koenig, Jr., was unable to be present. In his absence, Speaker Chudy called on Dr. Long to present the committee's report. Dr. Long read the report as follows:

"In compliance with the action of the House of Delegates on November 18, 1979, the following amendment to the Constitution of the Arkansas Medical Society is submitted for consideration at the annual session of the Society. The amendment is submitted without recommendation from the committee.

It is proposed that the wording of Article VI, Section 2, be amended as follows:

"The Council shall consist of the councilors, the president, first vice president, president-elect, secretary, treasurer, and immediate past president. The speaker and vice speaker of the House of Delegates and the past presidents shall be members ex-officio without vote; the immediate past president shall have a vote.

There shall be two councilors from each councilor district (delete here: to serve staggered terms of two years each) (and add new copy: which has two hundred members or less. In districts where there are more than two hundred members, there shall be an additional councilor for each additional one hundred members. The councilors shall serve staggered terms of two years each.) All councilors shall have equal voting privileges. A majority of the voting members shall constitute a quorum.' (Besides its duties mentioned in the Bylaws, the Council shall constitute the Finance Committee of the House of Delegates.)"

The report was referred to Reference Committee Number One.

Members of the House held district meetings on the floor to select appointments to the Nominating Committee:

1. Merrill J. Osborne, Blytheville
2. Jim Lytle, Batesville
3. Gerald Guyer, Stuttgart
4. John P. Burge, Lake Village
5. Cal Sanders, Camden
6. Lowell Harris, Hope
7. Robert McCrary, Hot Springs
8. Ray Jouett, Little Rock
9. Morris Henry, Fayetteville
10. W. P. Phillips, Fort Smith

Vacancies occurring on the State Board of Health and State Medical Board were announced, and Speaker Chudy requested that members from those districts meet immediately following adjournment of the House for selection of nominees.

Speaker Chudy announced that the House would consider any new business to be brought before the House, reminding members that any new business must have a two-thirds majority vote for introduction. G. Wallace Dickinson, Sevier County delegate, read a recommendation from the Sevier County Medical Society regarding Physicians' Assistants. Vice Speaker Phillips called for a standing vote on introduction of the item as new business. The House rejected consideration of the proposal from Sevier County.

Speaker Chudy announced meetings of the three reference committees and urged members to attend the open hearings of the committees following the meeting of the House of Delegates.

The first meeting of the House adjourned at 3:30 P.M.



## PRESIDENT'S ADDRESS

### A. E. ANDREWS

I would like to begin this report by expressing my personal thanks to a large number of people who have helped me and the Arkansas Medical Society this year.

All the staff at Fort Smith: Dee Thompson, Peggie Branham, Patricia Williams, Ann Lansdell, and Sue Watts. Ken LaMastus, Leah Richmond, Cliff Long, without them I couldn't have functioned. I think that unless you are president, you can't appreciate all the things that they do.

Richard Martin agreed to be chairman of the Convention Committee and he and his committee have done an outstanding job.

Jim Weber agreed to be chairman of the Legislation Committee, and his work has been great. He met with the HSA's concerning the Rural Health Clinics. He and I met with the State Board of Nursing on two occasions and he was so persuasive the first time that on the second occasion, I didn't have to say anything—I just introduced him and agreed. This resulted in keeping nurse practitioners under the direction of physicians.

I want to thank all those doctors who served at the Legislature as doctors-of-the-day. This has been very good for the Society. The doctors who served were: Stanley Applegate of Springdale, Bob Banister of Conway, Amail Chudy of North Little Rock, Julian Foster of Little Rock, W. John Giller of El Dorado, Francis Henderson of Pine Bluff, Ralph Joseph of Walnut Ridge, John Kirkley of Jonesboro, Marvin Leibovich of Little Rock, James Maupin of Dardanelle, J. Mayne Parker of Little Rock, F. Hampton Roy of Little Rock, and Ben Saltzman of Little Rock.

Last Wednesday I was at the State Capitol and we dedicated the Senate Infirmary as the H. Elvin Shuffield Infirmary. That is now the official name of the infirmary and there is a plaque on the door designating such dedication.

I also must thank our legal staff—Gene Warren worked for us right up to his death, and he will be missed in many ways.

There are many others, too numerous to mention, who have served me and your Society well. I'm very grateful for all your help.

I would like to speak a few words of praise for the American Medical Association. If they had done nothing else last year but lead the fight against President Carter's Hospital Cost Contain-

ment Law, then they would deserve our praise, but they did many other things. The AMA established the Voluntary Effort for Cost Containment. The AMA, through a court order, prevented the HEW from publishing a list of doctors who received more than \$100,000 from Medicare. You will remember that most of the names on the first list were wrong and Secretary Califano apologized publicly for the error and then proceeded to try to release another list the next year.

The AMA has continued to fight the Federal Trade Commission for us.

The AMA helped to quash the original national guidelines for health planning.

And I could go on and on. The AMA, in my opinion is the *only* national organization (with the possible exception of the American Academy of Family Physicians) that represents the practicing doctors of this country. I want to urge you to continue your support of the AMA and if you do not now belong, I would like to ask you to join this year.

We must also give greater support to the Arkansas Medical Political Action Committee. This should not be *instead* of your efforts to help local candidates, but should be in addition to that.

Our elected representatives do not always act or vote according to our wishes but, partly because of our support in the last elections, we now have good rapport with them. They at least consider our views before they vote.

This was very important in our fight against the Administration's Hospital Cost Containment Legislation. Incidentally, that legislation would have exempted several states because they have *State* Hospital Cost Containment Laws. Massachusetts has the highest average costs per patient per hospital stay in the nation (\$3000) and Massachusetts would have been exempted from the National law; whereas, Arkansas, with an average of \$896.00 (less than a third of Massachusetts) would have been included.

For \$25.00 you can join Ark-PAC and for \$99.00 or more you can become a sustaining member and wear a pin like the one I am wearing.

You should also consider running for something yourself, or, encourage a colleague to run for something. Morriss Henry has been carrying a big load for us in the State Senate for years. Dr. John Giller, an orthopaedic surgeon from El Dorado, is running for Lieutenant Governor now. He needs your help.



# THE INAUGURAL BANQUET



President A. E. Andrews of Texarkana was master of ceremonies for the Tuesday evening banquet. Seated at the head table with Dr. and Mrs. Andrews were Dr. and Mrs. Richard Martin of Paragould. Dr. Martin served as chairman of the Annual Session Committee.



Dr. and Mrs. Kemal Kutait, Dr. and Mrs. Shuffield and Dr. and Mrs. John Burge at the head table for the Tuesday evening banquet.



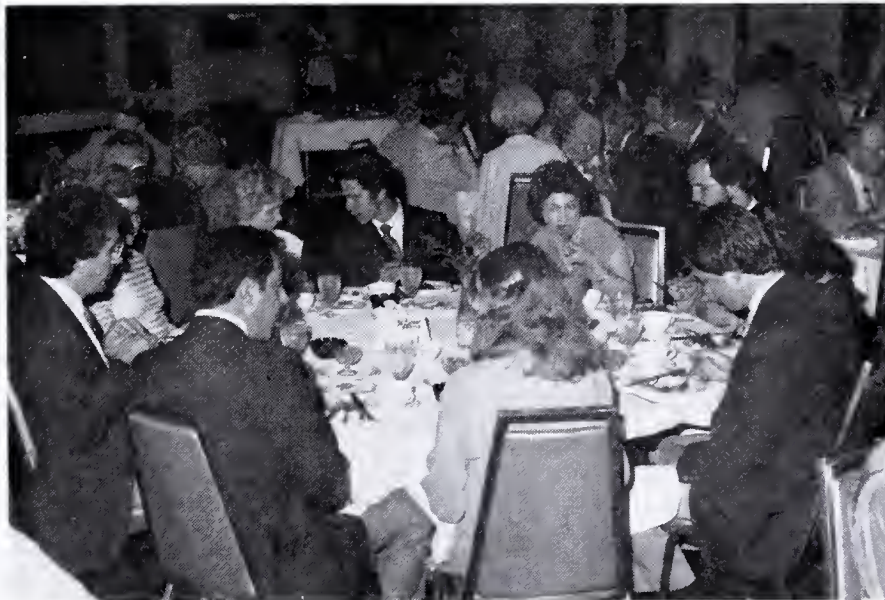
Partners of the new president and their wives at the banquet—Dr. and Mrs. Ken Lilly, Dr. Lawrence Pillstrom, Dr. and Mrs. Wendell Ross and Dr. and Mrs. Ralph Ingram.



# THE INAUGURAL BANQUET



Members of Dr. Kutait's family present at the inaugural banquet included son Kemal and his wife Lisa (left foreground) daughter Kay and her husband Jim Fowler (center) brothers Jesse and Ed and Ed's wife Phoebe (right foreground).



Dr. Kutait's sister, Mrs. Nita Fawcett of Little Rock (upper left) and his daughter Karin and her husband Tommy Hays (upper right) were in attendance to see Dr. Kutait installed as president of the Society.



Dr. and Mrs. Ralph Ingram (upper left) Dr. and Mrs. Ken Lilly, Dr. Lawrence Pillstrom, and Dr. and Mrs. Wendell Ross (back to camera) at the inaugural banquet on Tuesday when the physicians' partner, Dr. Kutait, was installed as president.





Robert B. Hunter of Sedro Woolley, Washington, president-elect of the American Medical Association, addressed the House of Delegates on April 20th.



A. E. Andrews of Texarkana, president of the Arkansas Medical Society for 1979-80, makes his "President's Address" to the House of Delegates on April 20.

Seventy-three out of Arkansas' seventy-five counties have been determined by H.E.W. standards to be at least partially medically underserved. This includes Pulaski County, Garland County, my county and probably yours, unless you practice in Grant County or Sebastian County. It's obviously ridiculous that all these counties are medically underserved, but this determination has already been made and Federal money is available, partially on this basis.

Wouldn't it be nice if most of the Government money in all these health programs could go for needed patient care, rather than for planning, statisticians, and administration? Hundreds of thousands of dollars have been spent in Arkansas over the years for health planning with very little benefit to patients, in my opinion.

Federal money and planning can't be discussed without a short discussion about some of our problems with the Arkansas Department of Health.

The State Cancer Registry has been discontinued. The Tuberculosis Program is one of the most successful in the world and it has been cut

back some and more cutbacks were threatened, but hopefully, this program can be continued.

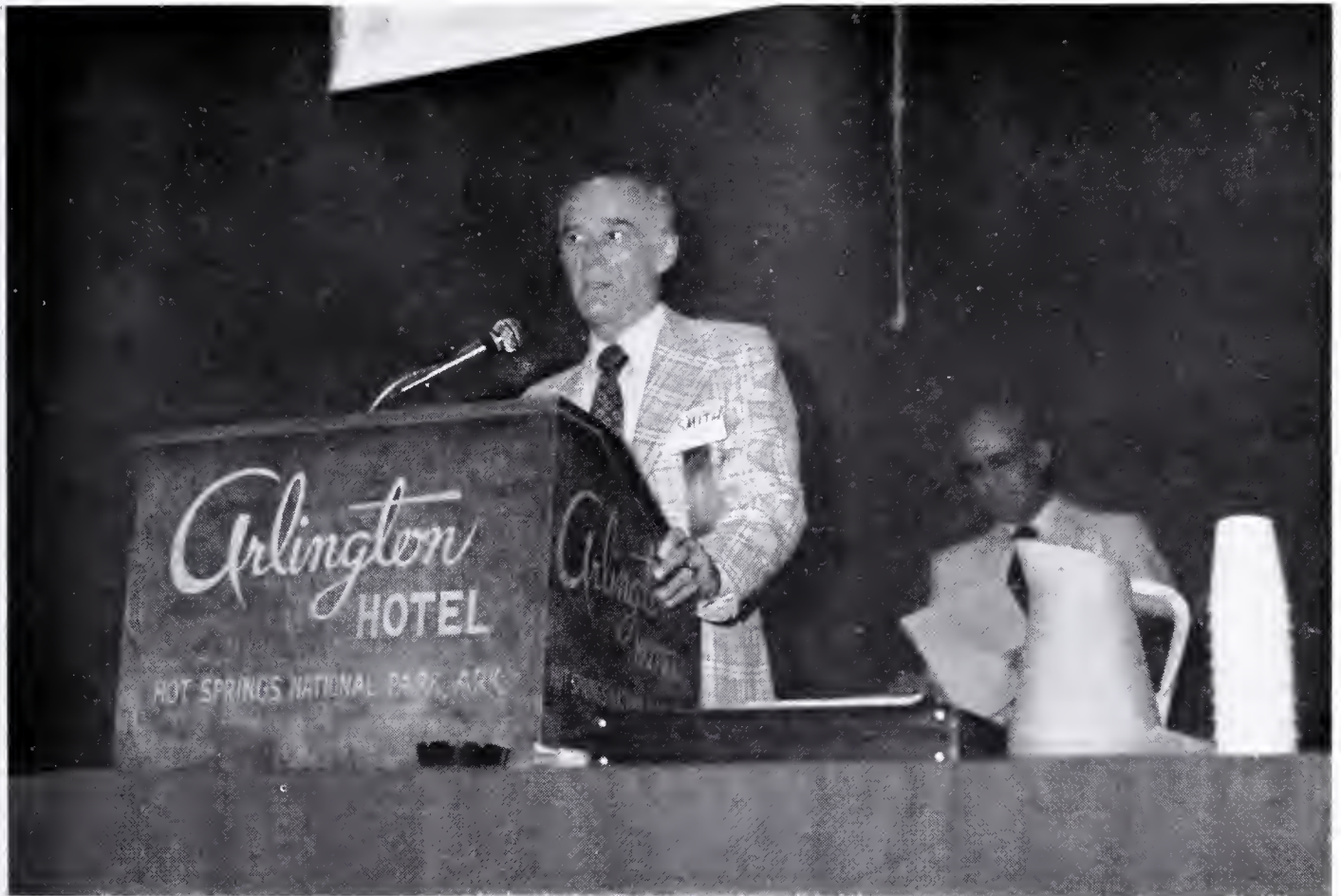
A grant application was considered for a State Data Bank to gather information from the hospitals in the State but, after we and others raised some objections, this application was withdrawn.

It seems strange to me that the Cancer Registry was discontinued because of a lack of money and yet, a much more elaborate and expensive data collection bank was planned at the same time.

A grant application to *plan* Rural Health Clinics was filed and after considerable controversy, this application was approved by the H.E.W. and funded. That grant, incidentally, was approved even though the H.S.A.'s voted against approval. Your representatives fought this application because we thought it had many bad features. I thought it sounded like a plan to establish HMO's in rural Arkansas with primary health care to be delivered by nurses rather than doctors.

I don't have any *personal* criticism for the director of the Arkansas State Health Department, Dr. Young. He is a very capable man, I'm sure,





Purcell Smith, Jr., of Little Rock, addresses the House of Delegates after being elected to the position of president-elect of the Arkansas Medical Society.

and he now meets regularly with our Executive Committee so that we can try to work out our differences in private so that we, hopefully, won't have a repeat of the Rural Health Care controversy. I think that many of the problems with the Rural Health Clinic Plan were caused by haste in the rush to get Federal money and could have been prevented by consultation with us or the State Board of Health.

The State Board of Health now has no control over the director of the Health Department. He is solely and completely answerable to the Governor. With this Governor and this director, that might be acceptable, but we may have another Governor pretty soon and he may want his own director and they may want to drop some programs and try some new ones and then, every four years we may have to go through more changes. The State Health Department has a budget of fifty million dollars now and almost 1700 employees. That could be a powerful political base.

The State Mental Hospital used to be a political football; the Highway Department used to be a political football; the State Game and Fish Commission used to be a political football.

I believe the Arkansas State Health Department

is going to become more and more active in the health problems in Arkansas (whether we like it or not) and I think the health needs of Arkansas are just as important as highways, and fish, and rabbits, and I urge you to urge your elected representatives to consider letting the State Board of Health operate the State Health Department.

Medicine has been criticized a lot lately because allegedly we have been putting too much emphasis on *treating* patients rather than preventing disease. I wonder if anyone would like for us *not* to treat sick patients? I don't apologize for the progress that has occurred in preventive medicine. The Tuberculosis Hospital has closed. What happened to malaria? typhoid fever? polio? There were more new cases of polio diagnosed per day in 1955 than in the entire decade of the '70's. Thirty thousand cases were diagnosed in 1955 and only twenty-six last year, and sixteen of these were in a religious group who had not received vaccine. Most cancers of the cervix are cured now because of pap smears. Most people live to adulthood now without having any serious illness. You can go anywhere in this country today and drink water from the tap.

*But, there's another kind of prevention that we,*

as doctors, really can't influence much. That's the kind that requires individuals to do something—quit smoking—quit drinking so much alcohol—quit eating so much—get some exercise—use seat belts. This kind of prevention requires that people change their life style. This type of preventive medicine has had a notable lack of success in America.

The leading cause of death in youths is *accidents* and, yet, many states have passed laws allowing kids to ride motorcycles without helmets. T.V. companies know the danger of alcohol and, yet, the major sponsors of athletic events on T.V. are beer companies.

Newspapers and magazines who condemn us for not showing enough attention to prevention are filled with cigarette commercials. The number one cancer killer in America is lung cancer and, yet, the Government subsidizes the production of tobacco and then bans Saccharin. More people died in this country last year from smoking than were killed in World War II and the Vietnam War.

The so-called "malpractice crisis" has abated somewhat, but some of the basic problems are still present.

In this day and time "all is possible." Patients watch Marcus Welby and Trapper John, and read about medical miracles and are primed to expect more than they are apt to receive.

Many people think that with more money it will soon be possible to conquer cancer, heart disease and aging so that we will live happily ever after. Some think that if you're charged with a crime, that if you get a good enough lawyer, that you can get off. That may or may not be true with lawyers, but it sure isn't in medicine. If you get certain diseases, it doesn't matter who you get for a doctor, you're going to die.

The politicians are still thriving by avoiding unpleasant truths and promising the undeliverable, not only in medical care but in most other fields as well.

When results are poor, then frustration, disappointment and anger are often present. Some attorneys are still available to exploit this. We still have a contingency fee system. But, there have been some improvements. The last Legislature made several welcome changes in our malpractice laws.

We also have a choice now for an insurance carrier. American Physician's Insurance Exchange

is selling policies now in Arkansas. When you get your malpractice insurance with them, then you become an owner of the Company. All the owners are physicians. In general, I think you will find that API approaches and handles malpractice claims like you would want them to, by fighting all unjustified and questionable claims. We have two Arkansas doctors on this Company's Board of Directors and I would like for you to consider API when your present coverage comes up for renewal.

Medical and hospital costs continue to be a problem. Physician's fees rose 9.4% in 1979. Hospital room charges rose 11.1%. The total medical care index rose 10.1%, *10.1%*. This compared to a C.P.I. rise of 13.3%; a rise in the energy index of 37%; a rise in the housing index of 16%; a rise in the transportation index of 18%. The medical care index was under the C.P.I. *every* month in 1979. We have done a pretty good job this year in holding down medical costs, but it's going to be harder in the future.

The Federal Government says that they are going to lower the rate of inflation. If they do, then maybe we can continue to hold down medical costs.

It's very difficult not to raise your fees when everything you buy is going up, but we've got to try. An excess profits tax has been voted against the oil companies and now that the precedent has been established this could very easily be extended to include doctors.

I don't have enough time today to give you my thoughts on all the problems that we, as medical doctors, face but I would like to briefly talk about a few.

HSA and other government agencies decide now who can get new equipment. These decisions are made, many times, on a basis of costs rather than quality. This type of control can very easily be extended from C.A.T. scanners to the number of specialists in a community; from dialysis units to where new doctors must practice; from radiation therapy centers to *where* and *by whom* patients get their surgery.

There is already talk of regionalization of surgery—starting with coronary by-pass surgery but, perhaps, leading to other vascular surgery then to bone or abdominal surgery.

Mandatory second opinions before surgery is being promoted now and, in spite of facts to the contrary, this is being pushed as a way to cut costs



by preventing large numbers of allegedly unnecessary operations. If the Government really wants to cut the costs of surgery, they should require second opinions from faith healers.

The Council has spent a lot of time this year discussing the Society's employee retirement program. Our plan has become expensive because we now have a cost of living clause in it. As you well know, the cost of living has been going up a lot lately. A committee has been appointed to study our pension plan and, hopefully, we can come up with a plan that we can afford and still be fair to the Society employees.

American medicine is the best in the world. Over three million people in this country manage to see a doctor every day. We have been treating more patients, curing more illnesses and, yes, preventing more illnesses than ever before.

A child born in this country in 1900 could expect to live forty-seven years, on the average. That child born today is expected to live seventy-three years. Life expectancy has increased 2.3 years just in the last decade.

In the last ten years, the rate of death from heart disease has decreased 17%. We have the lowest death rate in history. The infant mortality rate in this country was twenty in 1970. It is now down to fourteen in the U. S. and down to sixteen in Arkansas.

Fifty-eight percent of the people who develop cancer this year can expect to be cured.

The American people have voted with their feet, their heads, their bodies and yes, their pocket-books, to say that they want to continue to receive the very best quality medical care. I think that we should continue to strive to give them just that.



## FINAL SESSION

### HOUSE OF DELEGATES

**Wednesday, April 23, 1980**

Speaker Amail Chudy called the House to order at 10:00 A.M. on Wednesday, April 23, 1980. Invocation was by Councilor Ken Lilly.

Executive Vice President C. C. Long called the roll of delegates. The following delegates, officers, and members seated as delegates by action of the House were present:

ARKANSAS, Gerald L. Guyer; BAXTER, John F. Guenther; BENTON, Richard N. Pearson and Eugene Ball; BOONE, Charles A. Ledbetter; BRADLEY, George F. Wynne; CLARK, N. R. Ritter; CRAIGHEAD-POINSETT, John Baldrige and James M. Robinette; CRITTENDEN, Milton D. Deneke; FAULKNER, Robert B. Benafield; GARLAND, Ronald J. Bracken; GREENE-CLAY, Richard O. Martin and Larry Lawson; HEMPSTEAD, Lowell Harris; HOT SPRING, Russell W. Cobb; HOWARD-PIKE, U. Lee Smith; INDEPENDENCE, Jim Lytle; JEFFERSON, Banks Blackwell, Lloyd G. Langston and George Roberson; LEE, Dwight W. Gray; MILLER, Frederick E. Joyce; MISSISSIPPI, Eugene A. Shaneyfelt; MONROE, N. C. David, Jr.; NEVADA, H. Blake Crow; OUACHITA, Cal

R. Sanders; POLK, David D. Fried; POPE, Frank Lawrence and James Kolb, Jr.; PULASKI, Charles Logan, Robert Shannon, Mayne Parker, John McCollough Smith, Gordon Oates, Fred Kittler, William Mason, Ruth Steinkamp, Harold Purdy, Douglas Smith, George Mitchell, Warren Douglas, Frank Morgan, Glen Baker, Edwin Hankins, Purcell Smith, Robert Valentine, James Weber, Ben Johnson and Eva Dodge; SALINE, Jim Bethel; SEBASTIAN, Carl Williams, Annette Landrum, Hugh Lewing, Ken Wallace, A. C. Bradford, McDonald Poe and Morton C. Wilson; SEVIER, Wallace Dickinson; UNION, Allan S. Pirnique and Wayne Elliott; WASHINGTON, Stanley Applegate; WOODRUFF, James E. Rowe; YELL, James L. Maupin; COUNCILORS, Merrill J. Osborne, Asa A. Crow, John E. Bell, John Hestir, L. J. P. Bell, Raymond Irwin, John P. Burge, George Warren, C. Lynn Harris, R. Jerry Mann, Robert F. McCrary, W. Ray Jouett, William N. Jones, Morris M. Henry, Rhys A. Williams, Charles F. Wilkins and Ken Lilly; PRESIDENT, Kemal Kutait; FIRST VICE PRESIDENT, Paul Cornell; SPEAKER OF THE HOUSE, Amail Chudy; VICE SPEAKER, W. P.



Joe Verser, Secretary of the Arkansas State Medical Board, presents a Memorial Plaque to the widow of the long-time attorney for the Board, Eugene R. Warren.

Phillips; SECRETARY, Elvin Shuffield; TREASURER, Kenneth R. Duzan; PAST PRESIDENTS, Charles Henry, C. R. Ellis, Robert Watson, Ben N. Saltzman, T. E. Townsend, A. S. Koenig, Jr., W. Payton Kolb and A. E. Andrews.

Ray Jouett, Chairman of the Nominating Committee, reported to the House that Stanley Applegate had substituted for Morriss Henry as the ninth district representative on the committee. Chairman Jouett presented the following slate of nominees for consideration of the House:

For President-elect: Purcell Smith, Little Rock, and A. S. Koenig, Jr., Fort Smith

For First Vice President: Richard Martin, Paragould

For Second Vice President: Frank Morgan, North Little Rock

For Third Vice President: Harold Purdy, Little Rock

For Secretary: Elvin Shuffield, Little Rock

For Treasurer: Kenneth R. Duzan, El Dorado

For Speaker of the House of Delegates: Amail Chudy, North Little Rock

For Vice Speaker of the House of Delegates: W. P. Phillips, Fort Smith

For Councilor (two-year terms):

District 1: Asa Crow, Paragould

District 2: John E. Bell, Searcy

District 3: L. J. P. Bell, Helena

District 4: John P. Burge, Lake Village

District 5: Cal Sanders, Camden

District 6: C. Lynn Harris, Hope

District 7: Robert F. McCrary, Hot Springs

District 8: William N. Jones, Little Rock

District 9: Rhys A. Williams, Harrison

District 10: Ken Lilly, Fort Smith

For Delegate to the American Medical Association (term from January 1, 1981, to December 31, 1982): Joe Verser, Harrisburg

For Alternate Delegate to the American Medical Association (term from January 1, 1981, to December 31, 1982): A. E. Andrews, Texarkana

Speaker Chudy asked for nominations from the floor. Dr. Koenig requested that his name be removed from the proposed slate. The entire slate of nominations presented by the Nominating Committee was elected unanimously.

Speaker Chudy requested that Gordon Oates and Paul Cornell escort the new president-elect to the podium. Dr. Smith made the following re-





Past Presidents of the Arkansas Medical Society—(seated, left to right) H. King Wade, Jr., of Hot Springs, A. E. Andrews of Texarkana, Ben N. Saltzman of Little Rock, and George F. Wynne of Warren. (back row, left to right) C. R. Ellis of Malvern, A. S. Koenig of Fort Smith, Ross Fowler of Harrison, Stanley Applegate of Springdale, T. E. Townsend of Pine Bluff, Robert Watson of Little Rock and W. Payton Kolb of Little Rock.

marks in accepting the nomination for president-elect:

"I have no prepared remarks. I am sure that comes as a great shock at this stage of the meeting. I would be remiss if I did not thank each of you and the members of the Arkansas Medical Society. I come from Pulaski County—everybody has to come from somewhere. My pledge to you is that I will serve the entire membership of the Arkansas Medical Society to the best of my ability."

Speaker Chudy called for the report of Reference Committee Number One and requested that members of the committee be seated at the front of the room during the report of the committee chairman.

Members of Reference Committee Number One were: Paul C. Cornell as chairman, Charles Ledbetter, Lloyd G. Langston, Carl Williams and F. E. Joyce. Chairman Cornell presented the following report:

#### REFERENCE COMMITTEE NUMBER ONE

Mr. Speaker and members of the House of Delegates: Reference Committee Number One wishes to make the following report.

1. Report of the Council, John P. Burge, Chairman

Mr. Speaker, your Reference Committee recommends adoption of the report as published. There being no objection, it was adopted.

2. Committee on Constitutional Revisions, A. S. Koenig, Jr., Chairman

A rather lengthy discussion occurred regarding the amendment to the Constitution of the Arkansas Medical Society, Article VI, Section 2. A majority of the committee members agree to the amendment as published in Attachment #2. However, a minority report dealing with an upper limit of the number of councilors from any one district is to be presented.

Mr. Speaker, the majority of the committee recommends acceptance of the amendment to Article VI, Section 2, as published and I so move.

Speaker Chudy recognized W. P. Phillips who spoke in favor of the majority report. He expressed the opinion that the proposal was in the best interest of the entire Society. He pointed out that accepting the recommendation of the Reference Committee today did not automatically pass the bylaws amendment. Final passage will require



a two-thirds vote of approval at the annual session in 1981. He felt that members should have ample opportunity to discuss it with colleagues at home and be able to come back next spring and cast a vote on final action. He stated that to refuse to accept the report for publication and subsequent debate would only serve to accentuate that which divides the membership and would destroy what he felt to be an air of conciliation present at the 1980 meeting. He expressed the personal opinion that the cap proposal by the minority report was unnecessary and that the important step was that of more councilor representation.

Speaker Chudy then called for the minority report. The report was presented by Carl Williams of Sebastian County. His report was as follows:

It is thought by some that inequities exist in this representation. Specialty groups have voiced lack of or inadequate representation on the Council. Involvement of specialty groups in the Arkansas Medical Society is needed for continued growth of the organization. Entry to the Council by specialty groups is needed to provide input, allow cohesive function and for the assurance of total support by the Council for problems unique to each specialty.

Others have thought inequities exist on the basis of population. Pulaski County's bid for greater representation on the Council certainly has merit. Grave reservations exist, however, throughout the remainder of the State that this represents a grab for more power. We must provide adequate guidelines for any type of expansion of the Council. Future guidelines for expansion must of necessity include geographical factors, population factors, and specialty group factors. All should be considerations in the expansion of the Council. Adequate representation geographically within the limits and confines of Pulaski County must be assured so that North Little Rock and rural Pulaski County receives appropriate representation as well as Little Rock.

Potential problems may be created by thoughtless expansion without creating limits and anticipating future needs for representation. Monitoring of effects of expansion must be assessed as it proceeds.

With these factors in mind, the report of the Constitutional Revision Committee should be amended to limit the number of councilors representing a councilor district to a *maximum*

*of five* until the long-term effects of this change can be assessed. Equitable distribution of these councilors within the geographical confines of Pulaski County must be assured.

The officers of the Arkansas Medical Society should be charged with the responsibility of seeking new avenues of total physician involvement in the activities of the Arkansas Medical Society. The officers should further monitor effects created by expansion of the Council on its function and should report either positive or adverse effects to the House of Delegates.

Dr. Williams then moved that the proposed change in Article VI, Section 2, be amended to add the words "with a maximum of five councilors from any one district" so that the provision would read:

"There shall be two councilors from each councilor district which has two hundred members or less. In districts where there are more than two hundred members, there shall be an additional councilor for each additional one hundred members, with a maximum of five councilors from any one district. The councilors shall serve staggered terms of two years each."

Second to the motion for approval of the minority report was by A. S. Koenig of Sebastian County.

Ray Jouett, Eighth District Councilor, spoke against the amendment.

Vote on the report was by secret ballot. The minority report was rejected by a vote of 56 to 41.

The House then voted on the recommendation of the majority of the reference committee as presented by Dr. Cornell. The report was approved by a vote of 62 to 32.

Dr. Cornell then continued with the report of Reference Committee Number One:

3. Report of the Budget Committee, Ken Lilly, Chairman

The Reference Committee members were in agreement with the budget as published. The committee also wishes to bring to the attention of the House the Accountants' Report, page 6, note 2: Pension Plan, last sentence: "At October 1, 1979, the date of the latest actuarial study, the excess of the present value of benefits over plan assets was approximately \$351,000."

Mr. Speaker, your Reference Committee recommends the adoption of the Budget Report with the addition of the above sentence as the last sentence.





Fifty Year Club—Members of the Fifty Year Club of the Arkansas Medical Society were honored at a luncheon meeting on April 21. Present were (seated, left to right) G. Allen Robinson of Harrison, Clyde D. Rodgers of Little Rock, Eva Dodge of Little Rock, Davis Goldstein of Fort Smith, Gaston A. Hebert of Hot Springs (back row, left to right) Wallace Dickinson of DeQueen, John Guenther of Mountain Home, W. S. Riley of El Dorado, C. W. Jones of Benton, and Pierre Redman of Mena.

Ken Lilly, chairman of the Budget Committee, presented a substitute motion to delete the sentence pertaining to the pension plan. The substitute motion was approved.

Item 3 of the Reference Committee report was accepted by the House as amended. Dr. Cornell then continued with the report of Reference Committee Number One;

Mr. Speaker, your Reference Committee wishes to adopt the following reports as published:

4. Committee on Medical Legislation, James Weber, Chairman
5. Sub-Committee on National Legislation, W. P. Phillips, Chairman
6. Committee on Public Relations, Ray Jouett, Chairman
7. Ninth District Councilors, Morriss M. Henry and Rhys A. Williams
8. Report from the Arkansas Medical Political Action Committee, W. P. Phillips, Chairman

There being no objection, the reports were adopted.

Mr. Speaker, this concludes the report of your Reference Committee Number One and I move the report be accepted as amended. The House so voted.

The report of Reference Committee Number Two was read by Chairman Richard Martin.

#### REFERENCE COMMITTEE NUMBER TWO

The members of Reference Committee Number Two were N. R. Ritter, James Kolb, Jr., Kelsy Caplinger, III, L. J. Pat Bell and myself.

The committee met on Sunday, April 20th, and considered the following reports:

- Committee on Cancer Control, Herbert Wren, Chairman
- Sub-Committee on Liaison with Vocational Rehabilitation, John P. Wood, Chairman
- Committee on Continuing Medical Education, John M. Hestir, Chairman
- Ad Hoc Committee on Liaison with Health Systems Agencies, Kemal Kutait, Chairman
- Tenth Councilor District Professional Relations Committee, Samuel E. Landrum, Chairman



Eighth District Councilors, W. Ray Jouett and William N. Jones

Report of the Executive Vice President, C. C. Long.

Report of the Arkansas Foundation for Medical Care, Mr. Paul C. Schaefer, Executive Director

Mr. Speaker, your Reference Committee recommends the acceptance of the above reports as published in the Journal of the Arkansas Medical Society and I so move. There being no objection, the House approved.

Third Councilor District Professional Relations Committee, John M. Hestir, Chairman. The Reference Committee approves this report with the deletion of the third sentence on Page 443 of the March 1980 issue of the Journal.

Mr. Speaker, we so move. The House so voted.

Resolution on Mid-Winter Meeting from Sebastian County. The Reference Committee recommends that the House of Delegates reject this resolution and I so move. House voted 81 to 19 to reject the resolution.

The Reference Committee would like to create more interest in the winter meeting and makes the following recommendations.

1. The Mid-Winter Meeting be held for two days with the House of Delegates meeting each day.
2. That the reference committees meet after the first session or first day.
3. That a scientific session be held on the afternoon of the first day.
4. That the budget for the coming year be presented at the winter meeting.
5. That the location of the winter meeting be changed from year to year.

Speaker Chudy ruled that the House vote on the recommendations from the committee would be for referral to the Constitutional Revisions Committee for study and recommendation to the House. By voice vote, the House voted to refer the recommendations to the Constitutional Revisions Committee. There was one negative vote.

Chairman Martin then moved adoption of the report of Reference Committee Number Two as amended and it was so voted.

The report of Reference Committee Number Three was read by Chairman Annette V. Landrum.

### REFERENCE COMMITTEE NUMBER THREE

Reference Committee Number Three consisted of Allan Pirnique, William L. Mason, Lee Parker, H. W. Thomas and myself.

The committee considered the following reports:

*Committee on Public Health*, Ben N. Saltzman, Chairman. This report was discussed in length in some detail. The Reference Committee feels that the report fails to address a number of very serious problems in the State Health Department although it deals creditably with rural health. The problems this Reference Committee would like to see addressed are:

1. Clarification of the organizational structure of the State Health Department.
2. Assurance that medical decisions are being made by physicians.
3. Administrative supervision of the State Health Department should be restored to the State Board of Health.

The Reference Committee has reservations about the proposed rural health program using nurse practitioners and physicians' assistants.

This committee recommends:

1. A special study committee be appointed by the Council for ongoing follow-up of these problems.
2. The above matters be studied in detail by the Legislative Committee of this Society for immediate action.

Mr. Speaker, I so move.

Charles Wilkins presented a substitute motion that necessary grammatical changes be made in number one so that it does not necessitate Council appointment of another committee and that the Council would be charged with the on-going, follow-up of problems. The substitute motion was approved by the House.

*Sub-Committee on Tuberculosis*, Donald L. Miller, Chairman. The committee accepts this report and would like the Society to continue to support the operation of the chest disease program to its full potential.

*Immunization Sub-Committee*, Betty A. Lowe, Chairman. This report was accepted as written for information.

*Sub-Committee on Liaison with Auxiliary*, Frank E. Morgan, Chairman. This report was accepted as written for information.

*Seventh Councilor District Professional Rela-*



Leaders of the State Auxiliary for 1980-81—Mrs. Warren Boop of Little Rock is president of the Arkansas Medical Society Auxiliary for 1980-81; Mrs. Raymond Peebles of Hot Springs is president-elect of the State Auxiliary.

tions Committee, C. F. Peters, Chairman. This report was accepted as written for information.

*Ninth Councilor District Professional Relations Committee*, Charles A. Ledbetter, Chairman. This report was accepted as written for information.

*Report of the Arkansas State Medical Board*, Joe Verser, Secretary. This report was accepted as written for information.

The House then approved these recommendations of the Reference Committee.

*Committee on Aging*, Chalmers S. Pool, Chairman. The committee accepts the report and recommends adoption of resolutions one, two and three as written, and resolution four as amended thus: The Committee on Aging wishes to endorse those current practices which endeavor to control communicable disease among elderly patients (for example: the control of tuberculosis, flu and pneumonia) and hereby recommends continuing efforts in this direction. The committee wishes to add a fifth resolution: Resolution 5. The committee recommends reimbursement by third party

payers for immunizations (influenza, pneumococcal vaccines) and other preventive measures. The House voted to approve this recommendation as presented by Dr. Landrum.

Payton Kolb pointed out that there may be problems with the wording on the Resolution 5 and made the motion that the House reconsider the recommendation. The House so voted. After considerable discussion, the House voted to revise the wording of Resolution 5 to read as follows: "The committee recommends reimbursement by third party payers to medical doctors for immunizations (influenza, pneumococcal vaccines) and other preventive measures.

*Medical Education Foundation for Arkansas*, Robert Watson, President. This report was accepted as written, and our committee would like to commend the Foundation for its efforts and commend the Society members for their support of this program and I so move. It was so voted.

Chairman Landrum then moved that the report of Reference Committee Number Three be adopted as amended. The House approved.

Speaker Chudy called on the Chairman of the Council, John P. Burge, who presented the following report covering meetings of the Council held during the Annual Session:

#### REPORT OF THE COUNCIL

The Council met on Sunday, April 20, 1980, and transacted business as follows:

1. Adopted the following memorial resolution:

WHEREAS, the members of the Council were saddened by the death of our attorney and friend, Eugene R. Warren, and

WHEREAS, Mr. Warren had served the profession with distinction over a long period of time as counsel for both the Arkansas Medical Society and the Arkansas State Medical Board, and

WHEREAS, many of the laws of Arkansas pertaining to the practice of medicine were drafted by Mr. Warren, and

WHEREAS, Mr. Warren exemplified the finest traditions of law and medicine in his service to the people of this State.

NOW, THEREFORE, BE IT RESOLVED, that the Arkansas Medical Society record its sincere appreciation for Mr. Warren's outstanding service, and

BE IT FURTHER RESOLVED that the Society convey its respect and sympathy to his family.





Mrs. Raymond Yow, President of Southern Auxiliary, shares the spotlight with leaders of Arkansas Auxiliary—president-elect for 1980-81 Mrs. Raymond Peebles of Hot Springs, President for 1979-80 Mrs. Frank Morgan of Little Rock and president for 1980-81 Mrs. Warren Boop of Little Rock.

2. Approved requests for 1980 dues-exempt memberships as submitted by the county medical societies.
3. Approved the report of audit of the Society's records for 1979 as done by the accounting firm of Baird, Kurtz and Dobson.
4. Approved actions of the Executive Committee in a meeting held on March 26, 1980.
5. Voted to employ Mr. Mike Mitchell as legal counsel for the Society.
6. Voted to underwrite the cost of two campers at Aldersgate Medical Camps for the 1980 program.
7. Dr. Jones moved that the Council:
  - (a) instruct the current president of the Society to remove Dr. Kutait from the membership of the Reorganizational Study Committee;
  - (b) appoint a new chairman of the Reorganizational Study Committee from the current membership of the committee;

- (c) direct that a final report of the committee be made to the Council and House of Delegates at the 1980 winter meeting of the Society.

The Council voted to table the motion.

The Council then voted to request that the Reorganizational Study Committee report to the Council at the 1980 winter meeting.

8. Appointed the following to the Board of Directors of the Arkansas Medical Political Action Committee for one year terms:

W. P. Phillips	George Warren
Ken Lilly	Bobby McKee
Raymond Biondo	Larry Lawson
Jerry Mann	Mrs. Kemal Kutait
Donald Duncan	Mrs. Paul Cornell
W. Payton Kolb	Mrs. Charles Wilkins
F. E. Joyce	Mrs. John P. Burge

9. Appointed the following to the Medical Services Review Committee:

FOR:

Surgery	-----	Samuel Landrum, Fort Smith
Allergy	-----	Thomas Johnston, Little Rock
Dermatology	-----	Raymond Biondo, North Little Rock
Ophthalmology	-----	James L. Smith, Little Rock
Otolaryngology	-----	Lloyd Langston, Pine Bluff

Radiology --- Louis R. Munos, Hot Springs

10. Reappointed Martin Eisele of Hot Springs to the Board of Directors of the Medical Education Foundation for Arkansas.
11. Voted to add William Jones to the membership of the Ad Hoc Committee to Study the Pension Plan and designate Paul Cornell Chairman. Other members of the Committee are: Raymond Irwin of Pine Bluff, Jerry Mann of Arkadelphia, Richard Pearson of Rogers, Mahlon Maris of Harrison, and A. E. Andrews of Texarkana.

The Council further voted to instruct legal counsel to attend meetings of the Ad Hoc Committee and that others with expertise as determined necessary by the members of the Committee and the Council be utilized by the committee in its study.

The Council voted to authorize up to \$3,000 in payment of consultant services to the Ad Hoc Committee by Mr. Owens of Owens and Associates.





Auxiliary Officers for 1980-81—(left to right) President Mrs. Warren Boop of Little Rock, Northeast Vice President Mrs. Herbert Taylor of West Memphis; President-elect Mrs. Raymond Peoples of Hot Springs; Northwest Vice President Mrs. McDonald Poe of Fort Smith; Recording Secretary Mrs. W. J. James of Pine Bluff; Southeast Vice President Mrs. William S. Orr, Jr., of Little Rock, and Treasurer Mrs. W. Ray Jouett of Little Rock.

The Council met on Monday, April 21, 1980, and conducted business as follows:

1. Voted to support testing for PKU and hypothyroidism on all newborn infants by the time of discharge from the hospital.
2. Heard Mr. Jim House of Blue Cross-Blue Shield report on the results of a survey of participants in the Society group plan on proposed changes in benefits. He also reported on a feasibility study made on including physicians' employees and their families in the plan. The Council requested that the membership of the Society be polled to determine interest in including their employees and that a report be made at its next meeting.
3. George Warren reported on the American Medical Association Leadership Conference.
4. Voted to submit the following names to the Board of Trustees of Arkansas Blue Cross-Blue Shield for selection of one to fill a vacancy on the board created by the expiration of the term of J. P. Price:

George Warren, Smackover

Ken Lilly, Fort Smith

Rhys Williams, Harrison

5. Gave approval for the executive vice president to respond to a request from the Federal Trade Commission for comment on provider representation on boards of Blue Cross-Blue Shield plans.
6. Heard A. S. Koenig discuss regulations published in the March 11, 1980, "Federal Register" pertaining to Medicare Reimbursement for Hospital-Based Physicians. The Council requested that a resolution be drafted and brought back for approval.
7. Recommended that James Weber, Chairman of the Legislative Committee, appear before the State Medical Board to encourage the Board to address the issue of physician supervision of nurse practitioners.
8. Voted to change the time for the Tuesday morning meeting of the Council so that members might attend the Prayer Breakfast sponsored by the Committee on Medicine and Religion.

The Council met on Tuesday, April 22, 1980,



and transacted the following business:

1. Approved appointment of James Maupin to the Arkansas State Arbitration Commission.
2. Approved the following resolution submitted by Charles Wilkins of Russellville and directed that it be submitted to the House of Delegates of the American Medical Association:

WHEREAS, the Joint Commission on Accreditation of Hospitals was formed to foster better patient care,

WHEREAS, JCAH accreditation has come to be accepted as the indicator of Hospital excellence,

WHEREAS, perhaps due to outside pressure, the JCAH surveys have become detail oriented to the extreme, dwelling on minutia having little or nothing to do with level of patient care,

WHEREAS, there appear to be problems in areas of cost of surveys, effect of surveys on hospital costs, qualifications of surveyors, development of standards, inflexibility of standards, negative format of survey reports, lack of JCAH responsiveness and insensitivity of the JCAH to the appeals process,

WHEREAS, the JCAH survey has become more of an ordeal than a learning process,

THEREFORE, BE IT RESOLVED that the American Medical Association investigate the operations of the JCAH to see if it is indeed fulfilling the mission for which it was formed, or if it has simply become a bureaucracy within,

FURTHER, be it resolved that the American Medical Association after such investigation consider whether it should continue to support the JCAH or consider the development of alternative routes of Hospital accreditation.

PRESENTED BY: Charles F. Wilkins  
Russellville, Arkansas

3. W. P. Phillips, Chairman of the Committee on National Legislation, reported to the Council on plans for a trip to Washington to visit with the Arkansas Congressional delegation and requested suggestions from the Council.

The Council met on Wednesday, April 23, 1980, and transacted the following business:

1. Adopted the following resolution requesting a delay in implementation of regulations

published in the March 11, 1980, *Federal Register* pertaining to Medicare reimbursement of Pathologists and other hospital-based physicians:

The Council of the Arkansas Medical Society, in annual session April 20-23, 1980, at Hot Springs, Arkansas, expresses concern over the regulations published in the *Federal Register*, March 11, 1980 (42CFR Part 405).

While apparently directed specifically toward the reimbursement of pathologists and other hospital-based physicians under the Medicare law, its broad impact on the practice of medicine in other specialties and in the academic environment is not defined.

The regulation appears to be discriminatory and represents a new definition of physicians' services which have been in effect for fourteen years in compliance with the intent of Congress. The usual time interval for solicitation of comments has not been followed and the action of the Health Care Financing Administration is precipitous.

The Council of the Arkansas Medical Society therefore supports a delay in the implementation of these regulations until adequate opportunity has been given for comments to be made and the impact of the regulations on other fields of medical practice can be thoroughly studied.

This request is to be forwarded to all members of the Arkansas congressional delegation, and the Secretary of the Department of Health, Education and Welfare.

2. Authorized expenditures up to \$500 for a physician-clergy seminar planned by the Committee on Medicine and Religion for the fall of 1980.
3. Authorized the Executive Committee to appoint a physician to the sixth councilor district position on the Arkansas State Arbitration Commission.

Upon motion of Dr. Burge, the House approved the report of the Council as presented.

Vice Speaker Phillips recognized Elvin Shuffield. Dr. Shuffield introduced Mr. Mike Mitchell, legal counsel for the Medical Society, and Mr. Bob Cearley, attorney of the Arkansas State Medical Board. Mr. Mitchell addressed the House briefly. He stated that he had received the benefit of Mr. Warren's guidance for four years and that he felt equipped to properly represent

# CANDID PHOTOS FROM THE 1980 CONVENTION



Ken Lilly of Fort Smith, George Warren of Smackover and Charles Logan of Little Rock visit during one of the convention parties.



A. S. Koenig and W. P. Phillips of Fort Smith visit with J. P. Price of Monticello.



Dr. and Mrs. Robert Atkinson and Dr. and Mrs. H. King Wade, Jr., all of Hot Springs, are on hand for the Council reception on Sunday evening.



the Society. He mentioned that the members should know that he does have back-up from other members of the firm in handling of the Society's legal affairs. Mr. Mitchell expressed pleasure and honor in representing the Society and expressed the hope that there would be many years of good association.

Vice Speaker Phillips announced that the House would consider new business.

Ken Lilly, Chairman of the Budget Committee, requested permission to present a recommendation regarding an action taken by the House at the 1979 Annual Session pertaining to the Budget Committee. The House voted to consider the item of new business.

At the 1979 meeting, the House approved a reference committee recommendation that an accountant be allowed to sit on the Budget Committee and provide input. Dr. Lilly moved that

the House rule that the Budget Committee not be required to have an accountant present at each meeting but that the committee may, at its discretion, have an accountant present at meetings of the Budget Committee. By standing vote, the motion was adopted by the House.

The House approved the following nominations for vacancies on the Arkansas State Board of Health and State Medical Board:

For Board of Health:

First District—H. W. Keisker, Jonesboro; Asa Crow, Paragould; and Eugene Shaneyfelt, Manila.

Fifth District—Bob Banister, Conway; James Maupin, Dardanelle; and James Kolb, Jr., Russellville.

For State Medical Board:

First District—Bascom P. Raney, Jonesboro.

The final meeting of the House of the 1980 convention adjourned at 11:54 A.M.



## SCIENTIFIC SESSIONS

"Recent Advances in Oncology" was the theme for the scientific program presented Monday and Tuesday, April 21 and 22. Richard Martin of Paragould was program chairman.

First Vice President Paul Cornell of Little Rock presided at the opening session. Max Cooper, Professor of Pediatrics and Microbiology at the University of Alabama School of Medicine, Birmingham, spoke on "Spectrum of Malignancies of Antibody Producing Cells." "The Child with Cancer: Assessment of Current Therapy" was presented by Alexander Green, Director of Solid Tumor Services, St. Jude Children's Research Hospital, Memphis. Sidney Wallace, Professor of Radiology at the University of Texas Medical School in Houston, discussed "Interventional Radiology," "Percutaneous Biopsies," and "Transcatheter Infusion and Occlusion Therapy."

The Monday afternoon session included "The Surgical Management of Renal Cell Carcinoma in the Solitary Kidney" by John Palmer, Chairman of the Division of Urology, University of Texas Medical School, Houston. "Controversial Aspects of Breast Cancer" was presented by Ed-

ward Copeland, Professor of Surgery, University of Texas Medical School at Houston, with assistance by Kent Westbrook, Jack Sternberg, and W. Ducote Haynes, all of Little Rock. The final speaker presented by Second Vice President Richard Martin was David Bard, Associate Professor of Obstetrics and Gynecology at the University of Arkansas College of Medicine, who spoke on "Advances in Gynecologic Oncology."

Annette V. Landrum of Fort Smith, third vice president, was presiding for the final general session on Tuesday morning. William S. Howland, Professor of Anesthesiology at Cornell University Medical College, spoke on "The Effects of Cancer and Chemotherapy in the Perioperative Period." Paul Williams, Assistant Professor of the Department of Family Medicine at Indiana University School of Medicine, Indianapolis, discussed "Productive History of Physical Examination in Prevention and Early Detection of Cancer." The final presentation was "Who Benefits from Chemotherapy" by Bill L. Trantum, Assistant Professor of the Department of Medicine, University of Arkansas College of Medicine.

# CANDID PHOTOS FROM THE 1980 CONVENTION



Mrs. Gordon Oates of Little Rock and Society President A. E. Andrews.



Dr. and Mrs. Elvin Shuffield and Dr. Gordon Oates, all of Little Rock.



Past Presidents C. R. Ellis of Malvern and Stanley Applegate of Springdale.



## RELATED MEETINGS

The *Arkansas Chapter of the American Academy of Pediatrics* held a luncheon meeting on Monday, April 21, in the Arlington. Alexander Green of Memphis was guest speaker.

The *Alan Cazort Allergy Society* of Arkansas met on Monday evening, April 21, at Coy's Steak House in Little Rock. Max Cooper of Birmingham was guest speaker. Purcell Smith of Little Rock was elected president of the Society.

The *Arkansas Academy of Ophthalmology* met at 9:00 a.m. on Tuesday, April 22, in the Arlington. Dean Burgess of Washington University School of Medicine was guest speaker.

The *Otolaryngology Section* of the Arkansas Medical Society met at 9:00 a.m. on Tuesday with John Lore of Buffalo, New York, as guest lecturer. Tom Smith of Little Rock was elected president of the section. Paul Wills of Fort Smith was named president-elect and Robert Borg of Hot Springs is secretary.

The *Arkansas Academy of Family Physicians* held a luncheon meeting on Tuesday, April 22, in the Arlington. The guest speaker was Paul Williams of Indianapolis.

The *Arkansas Society of Pathologists* held a luncheon meeting on Tuesday, April 22, with a business session.

The *Arkansas Urologic Society* held a luncheon meeting on Tuesday with John Palmer of Davis, California, as guest speaker. Gerald Wahman of Fort Smith was elected president of the Urologic Society and Steve Wilson of Fort Smith was re-elected secretary-treasurer.

The *Arkansas Society of Internal Medicine* held a luncheon meeting on Tuesday, April 22, in the Arlington Hotel. During luncheon, Jack Blackshear, secretary of the Arkansas Society of Internal Medicine, spoke on being an informed internist. Following a business session, a scientific program was presented by Mark Bowles, Michael Hightower, Dale McGinty, Leon Blue, Larry D. Stonesifer, Kevin McCusker, and Robert Searcy, all of the University of Arkansas College of Medicine. John Crenshaw of Pine Bluff is president of the Arkansas Society.

The *Arkansas Chapter of the American College of Obstetrics and Gynecology* held a luncheon meeting on Tuesday in the Arlington. Speakers included Ewa Radwanska, W. Paul Dmowski, and Clay N. Wells, all of the University of Arkansas College of Medicine.

The *Arkansas Chapter of the American College of Surgeons* held a luncheon meeting in the Arlington on Tuesday, April 22. A program was presented by Charles D. Mabry of the University of Arkansas College of Medicine.

The *Arkansas Orthopaedic Society* held a luncheon business session on Tuesday, April 22, in the Arlington. Carl Nelson of Little Rock was elected president of the Society and James M. Kolb, Jr., of Russellville was elected secretary-treasurer.

The *Arkansas Society of Anesthesiologists* held a program session at 4:30 p.m. on Tuesday, April 22, in the Arlington. William S. Howland of New York was guest speaker.



## SCIENTIFIC EXHIBITS

Physicians and allied health organizations participated in the exhibits at the 1980 meeting. The Society expresses thanks to individuals who participated in the exhibits and added to the educational benefit of the meeting. Exhibitors were: F. Hampton Roy and Ken Augspurger, "Cataract Surgery with Intraocular Lens Implantation."

Robert Seibert and Hassan Bashiri, "Bilateral Cleft Lip-Palate Management."

Michael Stannard, "New Cinéangiography of

Congenital Heart Disease at Arkansas Children's Hospital."

Spencer Albright, "Office Treatment of Skin Cancer Using Multiple Modalities Excision and Closure, Including Flaps and Grafts, Cycro-surgery, and Electrosurgery."

Mr. Tom South, "Disability Evaluation Under Social Security."

Mr. Jack Diner and Mary Fran Griffin, "Impression Method of Fitting Artificial Eyes."

Jacob Amir, "Cancer of the Colon."  
 Florence Char, "Rapid Chromosome Diagnosis."  
 S. J. Wetmore, R. W. Seibert, and James Suen,  
 "Laser Laryngeal Surgery."  
 Wilma Diner, "Galactography."  
 Phillip Smith and Fayyaz Mirza, "Percutaneous  
 Gallstone Removal."  
 K. W. Cosgrove, Arkansas Affiliate, National So-  
 ciety to Prevent Blindness, "Diabetic  
 Retinopathy."  
 Mr. Herbert Truxton, American Cancer Society.  
 Deafness Research Foundation.  
 Robert McGrew, "Clinical Applications of the  
 CO<sub>2</sub> Laser in Airo-Digestive Tract Surgery."

R. Sloan Wilson, "Fireworks Blindness — Arkan-  
 sas Study."  
 Glen Baker and Rosemary Eizuna, "Clinical In-  
 dications for Chromosomal Analysis."  
 William A. Grunow, "Histochemistry."  
 James F. Kyser, "Rhinoplasty."  
 Hassan Bashiri, "Maxillofacial Prothodontics."  
 Department of Otolaryngology, University of Ar-  
 kansas College of Medicine, "Location of  
 Speech/Language Pathologists and Audiolo-  
 gists in Arkansas."  
 Ellery C. Gay, Jr., "Cosmetic Surgery in an Out-  
 Patient Surgery Center."  
 Arkansas Foundation for Medical Care, "PSRO."



## OTHER ACTIVITIES

### PRAYER BREAKFAST

A Prayer Breakfast for all members of the So-  
 ciety and Auxiliary was held on Tuesday morn-  
 ing, April 22. The breakfast was sponsored by  
 the Committee on Medicine and Religion, with  
 arrangements by C. R. Ellis of Malvern.

Dr. Ellis served as master of ceremonies for the  
 breakfast program. The invocation was by Al  
 Thomas of Hot Springs. Fred Henker of Little  
 Rock read from the Scripture. Mrs. Ronald J.  
 Bracken of Hot Springs was soloist. Principal  
 speaker for the breakfast was Ray Jouett of Little  
 Rock; his address is printed below. D. B. Allen  
 of Little Rock gave the invocation. Dr. Ellis led  
 the attendees in singing "This Is My Father's  
 World," accompanied by Mrs. Ken Lilly of Fort  
 Smith.

### THINGS THAT ARE EXCELLENT

Ray Jouett

*"That ye may approve things that are excellent."*

PHILIPPIANS 1:10

In trying to think of something to bring before  
 this group whom I consider a group of excellent  
 men and women, this was something that came to  
 my mind, having done some work and research  
 on the Apostle Paul for a Bible character study.  
 And the whole letter to the Philippians, I think,  
 takes on a very important atmosphere when one  
 remembers the circumstances under which it was  
 written. Paul is a prisoner in Rome. The emper-

or of Rome is none other than Nero himself.  
 And he would have expected to offer little sym-  
 pathy for such a man as Paul. And Paul was soon  
 to go on trial for his life before the Emperor Nero,  
 so whatever he wrote to the Philippians would  
 have the dew of death upon it, because shortly  
 he is going to be put to death. Yet he writes to  
 these people and talks to them about things that  
 are excellent and asks them to approve, that is,  
 embody many of the things that are  
 excellent.<sup>2, 6, 8, 10</sup>

Paul's joy is reflected here with real concern.  
 His hopefulness is weighted down with a sense  
 of difficulty ahead. In the very first paragraph  
 of this little epistle, he gives away the secret  
 yearnings of his heart that these people might  
 approve the things that are excellent. I think we  
 might consider for a moment what that meant in  
 the society of that day. And anyone who has read  
 a little of mythology knows that the most obvious  
 facts of life suggested all manners of low and de-  
 grading thoughts in regard to paganism that was  
 so prominent at that time. Paul's cultural back-  
 ground and environment were so different from  
 the environment that was furnished here with  
 gods and goddesses, and symbolized everything  
 that was mean and base.<sup>6</sup> The things that are ex-  
 cellent as Paul appraised excellence were not  
 easily distinguished and certainly would not have  
 been approved in the City of Rome, and much of



the Roman Empire at that time, as well as the City of Philippi.

The long swing of historic process has again made this letter a very contemporary document. The excellent way of life is certainly a blur, possessed with the great advantages that we have, the great wealth that we have, the great amount of entertainment, and we find ourselves living in a rich, glorious, glamorous, avaricious America. It is alarmingly easy to become reconciled to almost anything that is placed before us. We see personal integrity sent into retirement in our group life. The vulgar is taken to be necessary while what is customary is considered right and proper. Our critical powers and our moral discernment are held in abeyance while the Victorian dikes are breaking all around us. And even ailing youth has become infected from its environment that is so evident in a sickened age. A passion to be average has stifled the resolve to be excellent. To do good has displaced the will to be good. And it is also evident that so few men and women of first class intellectual ability feel the compulsion to do something that is great. And I think that this is so evident in the field of medicine that it is so easy to plod along in our mediocre way and not be concerned about so many things that do fall within the category of excellence and greatness. And it has become too easy to allow ourselves to get caught up in our society and to forget that there are other things besides attending our office, committee meetings, society meetings, and yet not be concerned about the things of which are so prominent in our everyday life, and we tend to leave those to the care of someone else.

The question then is what are these things that are excellent that we should approve? And they are the same things that Paul was urging the people of Philippi to commit their lives to. And for our answers to this question, we need to turn to the extended moral experience that Paul himself laid out for us in his writings.<sup>6</sup>

1. *Humility* — This is one of the things that are excellent. And we are all hesitant to speak of humility in the modern world where the advertising value of men and things exceed their real value. And yet I think this word is perhaps more needed than any other of those that we are going to look at in regard to things that are excellent. Also, we think in terms that this is a word that we find difficult to place on a physician because we see many physicians that we

know personally do not exhibit humility. And also, it is not evident by their patients who see them.

This is not true of all physicians and we are all familiar with physicians that we have known and loved who exhibited a great amount of humility. I think this was especially true of the old physician, the one of whom we hear referred to as such a fine man and everyone in the community loved him. I grew up in a family of physicians. And my grandfather and my uncle were men who displayed great humility. And reflecting about this through the years, I think I have come up with a reason why they displayed so much humility contrasted to the present society of physicians. And the reason being that the physician fifty years ago had so little to offer the patient other than his visit, and so many of them did not do well. As a result, he was kept humble. The physician today has in his armamentarium so many things that do make the patient better and do cause the patient to get well that he loses the perspective of the healing that goes on and feels that he himself has been responsible for this well patient and this healing process.

How would one describe humility? And perhaps one definition would be that humility is the deliberate recognition of God as the source of our strength, our skill and our power. Humility is also a frank and a full acknowledgment of unnecessary imperfections in our work even after a period of unremitting toil.<sup>12</sup> And all physicians have gone through that period of unremitting toil to arrive at this particular point. The very effectiveness of human effort to relieve suffering and forward the secular aspiration of man has created a suspicion that human effort is all that is needed to buy an aid as a necessary force for human improvement and that the nerve of religion today is not found entirely necessary, certainly not one of man's most conscious needs. The triumphant skill of the surgeon, the ready wit of the philanthropist, and the practical good sense of the minister, all combined with the world-conquering career of the industrialist, have united to silence, I think, the cry to God for help.

The very difference between Paul and Nero, I think, is great evidence of humility before God. We are told that the pagan Pythagoras offered a sacrifice to the gods in joy at a mathematical discovery. If that be so, then how much more ought





Robert Benafield, of Blue Cross-Blue Shield, visits with Dr. and Mrs. A. E. Andrews of Texarkana.



Southern Auxiliary President Mrs. Raymond Yow with Mrs. Gordon Oates and Dr. Deno Pappas.



Dr. and Mrs. John Guenthner of Mountain Home with Dr. Ben N. Saltzman of Little Rock.



the modern man of skill, especially the physician with his training of excellence, turn to God in humble thanks.

An example of a man growing without evidence of humility was pointed out by George Whitfield, the great preacher of the Awakening Period of American religion. And he wrote Benjamin Franklin a letter in 1752, at which time he was observing the struggle of Benjamin Franklin for the good life. And in this he pleaded and he wrote: "As I find you growing more and more famous in the learned world, I would recommend to you diligent and unprejudiced study of the new birth. It is a most important study, and when mastered will fully answer all of your pains. I bid you, my friend, remember that one at whose bar we shall all presently appear has solemnly declared that without it, we shall in no wise see his kingdom."<sup>5</sup>

Whitfield, undoubtedly, played a great part in the changing of Franklin's life from the shallow, from the unspiritual to the profound, and helped him to understand the freedoms that are to be found when brought in contact with God. And as a result, Franklin composed his own epitaph which reads: "The body of Benjamin Franklin, printer, like the cover of an old book, its contents torn out and stripped of its letterings and gildings, lies here, food for worms, but the work shall not be lost, for it will appear once more in a new and a more elegant edition, revised and corrected by the author."<sup>6</sup> From this one would believe that Benjamin Franklin likewise learned of humility.

2. *Courage* is another of the things that are excellent. History abounds with great men who were great because they possessed this particular virtue. They had the courage to stand up when it was unpopular. They had the courage to step forward even though they realized that this meant their death. This is a virtue that is extremely hard to come by in our present generation. And the reason being is that we have never had to display the fact that we had great courage.

There are three kinds of courage: First, we have the Greek virtue of courage and it is confined almost entirely to valor in battle. And there are some of us who have known what it was to be involved in a war and had to display at least some element of courage. But at the present time, this has little correspondence with anything that is supremely important in modern life. And again, we have the courage of endurance, com-

monly called fortitude. And I think this is a virtue that all physicians possess or they would not have arrived to this point in time. It bears pain rather than goes to risk it, it bows to the inevitable rather than carve out a destiny for itself. It is a passive endurance. It is helplessly brave before evil and seems overwhelming. The third phase of courage is needed in our modern situation more, and that definition is that courage is a gallant spirit, throwing itself into a worthy cause. It is an aggressive attempt by men and women of capacity to improve, to reform, to redeem, to change that which is not right.<sup>12</sup> This type of courage in our day means to stand up and to speak out for the things that are not popular, to be of the minority in a particular point. Courage in a social order such as we are familiar with where wealth is great and is easily accumulated means the rash renunciation of same, such an individual was Frances of Assisi.<sup>3</sup> It means the burning eloquence and the ongoing toil of a Wesley.<sup>4</sup>

Mankind today is not blessed with an excess of this virtue. Christianity, for instance, has fallen into the hands of interpreters who have toned down many of its hard demands. In the meaningful composition of the Sermon on the Mount, we are shown the discouraging baseness of human conduct, but presently we are supposed to assume that Jesus could not have meant it for a world such as ours.<sup>7</sup> So we are offered a traditional theology, all of which serves to dull the edge of courage and to set back the day of resolution. If our profession is going to regain its place in the sun that society has once visualized, we are going to have to have a lot of men who are presently living and men who are yet to come who will possess this point of excellence, that of courage.

Putting it more specifically, all of us think about this or that and thinking is a distinctive activity that can be done in a variety of forms, but thinking is not just a matter of dreaming and entertaining images and possibilities. We can also make thinking transitive. Just as our early teachers told us about verbs which become transitive when they take a direct object, so we can think about ourselves and propose for ourselves and for our society wants and hopes and wishes and plans and goals, and even a mode of thinking, feeling and behaving. This denotes action. To do this kind of thing is not to indulge in a fancy, but it is to live a life of the spirit in con-



# THE COUNCIL RECEPTION



Members of the Executive Committee and their wives formed a receiving line for the Council Reception. (left to right) Dr. and Mrs. Elvin Shuffield, Dr. and Mrs. John P. Burge, Dr. and Mrs. Kemal Kutait, and Dr. and Mrs. A. E. Andrews.



Mrs. Kemal Kutait and Dr. and Mrs. M. J. Osborne.



Mrs. John P. Burge and her mother, Mrs. Vera Nunnery, with two members of the staff at the Council reception on Sunday evening.



junction with what we desire to do that is very distinctively human.

Specifically again, our medical society is in great turmoil. It keeps bubbling and boiling. We continue to try to hold the lid on. We must bring to a close this internal friction and concentrate on forces threatening medicine from without.

I would like to challenge our new president to work toward this end over the next year and would also like to suggest that he appoint an ad hoc committee from the House of Delegates to study the problem, men who are reasonable, not emotional, not easily distracted, who will sit down and air these differences and work out a compromise.

We also need to return the Society to the House of Delegates, because too much power has been concentrated in the Executive Committee and the Council. Until this is done, we are not going to interest a delegate to come and represent his component society at the interim and the yearly meetings.

3. *Loyalty* — This is perhaps the most obvious of the things that are excellent. The moving motive that played upon the life of the Apostle Paul was his unfailing loyalty. He constantly reiterated throughout his life that I live, yet not I, Christ liveth in me. And this was a bold statement, but certainly it was a statement that was borne out by the way he lived. The physician needs to exhibit loyalty of this type which can be evidenced by all about him, because the physician is noticed, he is quoted, he is watched, and as a result, this particular attribute has great impact upon his surroundings.

Loyalty is one of the things of excellence not chiefly for what it makes us able to do, but what it does for us. It makes us persist, it makes us persevere. Loyalty to one's belief is important, but loyalty to God, of course, is more important than all. We praise Lincoln and we praise and we wonder, and we wonder upon what meat did this man eat that made him grow so great, and it remained for Tolstoi to give us the clue who when the great emancipator died wrote "Lincoln was a Christ in miniature."<sup>11</sup> This man exhibited loyalty to a degree of which perhaps we have never known another President. Another example of an individual who possessed great loyalty was that of James Boswell. We know that James Boswell came down to London from Scotland. He was an idler, he was a lecher, he was a

drunkard, he was a snob, and at age 23, he met the great Dr. Samuel Johnson, and he became a loyal, devoted friend to this man. And the result of this loyalty was the greatest biographer in English, and he left an undying fame for his idler, this drunkard and this snob.<sup>9</sup> We, as physicians, find it so easy to be too busy to exhibit loyalty to any sort of an idea, either spiritual or humanist.

4. And the last that we can finally add is *enthusiasm* for the best to the catalog of things that are excellent. Returning to the beginning in which we referred to Paul writing to the Philippians, he asked them to become blameless children of God without blemish in the midst of a crooked and a perverse generation among whom ye are seen as lights in the world. With an eye singled for excellence to his friends, Paul is keenly mindful of the deadly lure of the tangible pleasures, the seductive pull of the popular manner of life. And he craved for his own the consuming enthusiasm for the very best.

We are all moved by a certain enthusiasm for the best. We are at least willing to see the best prevail and to have the right win. We are not always willing to help the right win or to make the best prevail. We are all eager to see our world change, to have ideals rule. We are not always ready to give of ourselves in a man-sized will to change our world and to put ideals into power. We fail in this because we are tolerant. We are tolerant of right and wrong alike and we fail because we lack enthusiasm. The organizational structure of the practice of medicine as we know it is rapidly changing in front of us. We do not like it, but the only way we are going to change it is through the exhibition of enthusiasm.

Enthusiasm that we can convey to other people who are in positions to help us change. Saint Augustine said that a Christian was someone who could set the heart of another individual afire.<sup>1</sup> And that is what we need to do if we are going to change the order of the social structure that is threatening the practice of medicine. We must all embody the enthusiasm that was evident by the answer to the question that was given to the old Scotchman. And that was "What think ye of death?" And his answer was that "I am not concerned about death. If I die, I will go home to be with the Lord, and if I die not he will continue to be with me here." This is an assurance and evidence of great enthusiasm.

# THE COUNCIL RECEPTION



(Left to right) Mrs. A. E. Andrews, Mrs. Larry Lawson, Mrs. Asa Crow and Mrs. John Hestir.



Dr. and Mrs. Jim Lytle of Batesville with Executive Vice President C. C. Long.



Dr. Larry Lawson of Paragould and Dr. John Burge of Lake Village visit with a member of the Auxiliary during the Council reception.



The struggle for excellence will continue and our choice is continually before us. With shrewdness we can make our way through life minding the things of the earth, or with exhibited courage and enthusiasm, we can determine upon the things that are excellent for ourselves and for our times. We have exhausted the catalog of things that are excellent no more than the entrance examination exhausts the meaning and the value of a college test. But I think these things stand for us as an entrance test, humility, courage, loyalty and enthusiasm. These are the things that are excellent.

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#### MEMORIAL SERVICE

A joint Society-Auxiliary Memorial Service was held at 1:00 p.m. on Sunday, April 20, with Society President A. E. Andrews presiding.

President Andrews read the following names of members of the Society who had died since the 1979 meeting:

Nolan F. Beverly, Little Rock  
 Millard W. Black, Little Rock  
 Julian L. Foster, Little Rock  
 H. Ray Fulmer, Little Rock  
 William L. Fulton, North Little Rock  
 W. Mage Honeycutt, Little Rock

Walter G. Klugh, Hot Springs  
 Rustam A. Malik, Pine Bluff  
 Don L. Mask, Hamburg  
 Ernest A. Mendelsohn, Fort Smith  
 J. H. McCurry, Cash  
 R. O. Norris, Tuckerman  
 Oliver Smith, Hot Springs  
 Paul T. Stroud, Jonesboro  
 George B. Talbot, Pine Bluff  
 John P. Thompson, Benton  
 Ross Van Pelt, Holiday Island  
 H. B. White, Morrilton  
 Eugene H. Wicker, Texarkana

President Andrews also included in the list of deceased the name of Mr. Eugene Warren, who had served for many years as legal counsel for the Society.

Mrs. Frank Morgan, president of the Auxiliary, read the following list of names of Auxiliary members:

Mrs. William Abbott, Little Rock  
 Mrs. J. A. Baker, Paragould  
 Mrs. E. O. Day, Hot Springs  
 Mrs. L. G. Fincher, El Dorado  
 Mrs. James Hawley, Camden  
 Mrs. A. C. Kolb, Little Rock  
 Mrs. David Newbern, Little Rock  
 Mrs. J. H. Scroggins, Little Rock  
 Mrs. Martha Hathcock Weddington,  
 Fayetteville

Mrs. John Wilson, Magnolia

Mrs. Dorothy Gray, soprano, sang "Abide With Me" by Ives, accompanied by Katrina Williams.

The Reverend Carlos Martin of the First United Methodist Church in Hot Springs made the Memorial Address.

#### PAST PRESIDENTS' BREAKFAST

The former presidents of the Arkansas Medical Society were guests at a breakfast on Wednesday morning of the convention. Present were: A. E. Andrews, George F. Wynne, W. Payton Kolb, A. S. Koenig, Jr., T. E. Townsend, Ben N. Saltzman, Robert Watson, Stanley Applegate, Ross Fowler, C. R. Ellis, and H. King Wade, Jr.

#### FIFTY YEAR CLUB

Members of the Fifty Year Club of the Arkansas Medical Society were honored at a luncheon meeting on Monday. For the past year, Dr. Eva Dodge has served as president of the Club and Dr. G. Allen Robinson of Harrison was secretary.

# THE COUNCIL RECEPTION



Dr. F. E. Joyce of Texarkana and Dr. A. S. Koenig of Fort Smith.



Dr. Jim Lytle of Batesville and Dr. John Bell of Searcy.



Mrs. Warren Boop, Auxiliary president, with Dr. and Mrs. Lynn Harris of Hope.



Dr. John Hestir of DeWitt and Dr. Ken Lilly of Fort Smith.



Welcomed to Club membership were Clyde D. Rodgers of Little Rock and W. S. Riley of El Dorado.

Others present included George W. Dickinson, John Guenther, Pierre Redman, Davis Goldstein, Gaston Hebert, and Curtis Jones, Sr.

Dr. Robinson was elected president of the Club and Dr. Rodgers was elected secretary.

A program entitled "James Ewing — Oncologist" was presented by Dr. Robinson. Members of the Club shared interesting oncology cases they had during their years of practice.

### **JAMES EWING — ONCOLOGIST**

by **G. Allen Robinson**

James Ewing, M.D., 1866-1943, Oncologist, was born in Pittsburgh, Pennsylvania, the son of Thomas and Julia Ewing. He attended Amherst College, and received his M.D. degree from the College of Physicians and Surgeons, Columbia University, in 1892.

Dr. Ewing was attracted to Pathology under the direction of Dr. T. M. Prudden, and had further training under Dr. Francis Delafield. At the age of 33, Dr. Ewing was called to head the Department of Pathology at Cornell Medical College, and occupied the Chair until 1932.

In 1913 the Memorial Hospital affiliated with Cornell University Medical College, and Dr. Ewing became President of the Medical Board. The Memorial Hospital had its beginnings on February 7, 1884, and was called the New York Cancer Hospital, located at 106th Street and Central Park West. The hospital was opened with formal ceremonies on December 6, 1887. The name was changed on March 6, 1899, to General Memorial Hospital for the Treatment of Cancer and Allied Diseases.

In 1912 Dr. Henry H. Janeway took charge of the department of cancer surgery and radiation therapy at the Memorial Hospital. He was a pioneer in the clinical applications of radium and Dr. Ewing furnished the histo-pathological studies through which radium therapy thrived and survived.

In 1919 Dr. Ewing's First Edition of Neoplastic Diseases was published. It has been printed in several languages and has become the bible of Oncologists.

On May 20, 1938, the cornerstone of the new hospital was laid on a site given by John D. Rockefeller, Jr., at York and First Avenues and

East 67th and 68th Streets, Manhattan. The hospital entered a new era of expanding usefulness in the diagnosis and treatment of cancer and allied diseases, in professional and lay education and in research into the causes of one of the oldest and most serious of the enemies of mankind.

Two scientific contributions made by Dr. Ewing are the reticulum-celled sarcoma and the non-osteogenic tumor of the bone.

Dr. James Ewing was one of the founders of the American Society for the Control of Cancer, and for many years was on the editorial boards of the Journal of Cancer Research and the Archives of Pathology. Thirteen volumes of Dr. Ewing's papers and associated articles have been collected by me and presented to the M. D. Anderson Hospital and Tumor Institute.

### **COUNCIL RECEPTION**

A reception for all members of the Society was held on Sunday evening, with members of the Council serving as hosts. Members of the Executive Committee and their wives formed a receiving line at the entrance to the ballroom of the hotel.

The reception is hosted by the Society to provide an opportunity for members to visit with the Society leadership regarding Society activities. Attendance was good at the reception and officers of the Society enjoyed the fellowship of members around the State.

### **BLUE CROSS-BLUE SHIELD PARTY**

On Monday evening of the convention, a party for the members was hosted by Arkansas Blue Cross-Blue Shield. George Mitchell, president, and members of his staff were present, extending hospitality to members of the Society. The Society expresses appreciation to Dr. Mitchell and Blue Cross-Blue Shield for the party.

### **INAUGURAL BANQUET**

President A. E. Andrews of Texarkana served as master of ceremonies for the Inaugural Banquet on Tuesday evening of the convention. Invocation was by Ken Lilly.

Seated at the head table for the banquet were President and Mrs. Andrews, President-elect Kemal Kutait and Mrs. Kutait, Secretary Elvin Shuffield and Mrs. Shuffield, Chairman of the Council John P. Burge and Mrs. Burge, Chairman of the Annual Session Committee Richard Martin and Mrs. Martin.





Dr. Andrews asks Dr. Kutait to take oath of office.



Kemal Kutait of Fort Smith takes the oath of office of president of the Arkansas Medical Society.



The gavel, symbol of office of president of the Society, passes from A. E. Andrews to Kemal Kutait.



The new president addresses the membership following his inauguration.



President Andrews introduced the following special guests:

Mr. Frank Schweitzer, President of the Arkansas Hospital Association, and Mrs. Schweitzer.

Mrs. Frank Morgan, North Little Rock, Immediate Past President of the Arkansas Medical Society Auxiliary.

Mrs. Warren Boop, Little Rock, President, Arkansas Medical Society Auxiliary.

Mrs. Raymond Peeples, Hot Springs, President-elect, Arkansas Medical Society Auxiliary.

George Mitchell, President of Arkansas Blue Cross-Blue Shield, and Mrs. Mitchell.

Past presidents of the Society who were present were recognized by Dr. Andrews. They were George F. Wynne of Warren, W. Payton Kolb of Little Rock, A. S. Koenig, Jr., of Fort Smith, T. E. Townsend of Pine Bluff, Ben N. Saltzman of Little Rock, Robert Watson of Little Rock, Stanley Applegate of Springdale, Jack Kennedy of Arkadelphia, Ross Fowler of Harrison, and C. R. Ellis of Malvern.

Dr. Andrews administered the oath of office to Kemal Kutait of Fort Smith and presented a gavel as a symbol of the office of President of the Arkansas Medical Society.

Dr. Kutait presented to Dr. Andrews a plaque of appreciation from the Society for his service as president.

Dr. Kutait addressed the group as follows:

I would like to recognize some people who are very important to me. To allow me the liberty of being absent from the office requires real sacrifice on the part of my partners. They have accepted this imposition without protest — so far! It is indeed a privilege to work with men as fine as the Family Doctors and it gives me great pleasure to present them — my partners and their wives:

Wendell Ross and his wife Joy

Ralph Ingram and his wife Aline

Lawrence Pillstrom

and the man with whom I've worked the longest and probably is well-known to most of you — Ken Lilly and his wife Iris.

The next group of people to introduce to you are also very dear to me. Together we learned the art of survival. They are my two brothers and one sister. Beginning with the youngest, my brother Jesse of Fort Smith; my brother Ed, and his wife Phoebe, of Little Rock; my only sister, Nita Fawcell of Fort Smith. My other brother, the Reverend Ralph Kutait, was not able to be

here.

I am very pleased that my children could be with me this evening. They are Kay and her husband, Jim Fowler, of Little Rock, Karin and her husband, Tommy Hays, of Russellville, and my son Kemal and his wife, Lisa, of Durant, Oklahoma.

## INAUGURAL ADDRESS

**Kemal Kutait, M.D.**

Thank you for the honor of serving as your president. I am extremely proud to serve in this position. I hope that I can make a worthy contribution to my chosen profession. I pledge my time and effort to the welfare of the Society. It is my hope that we can all work together as a cohesive group to make this a year of achievement. I will do everything possible to assure quality medical care for the citizens of Arkansas and to resist any further encroachment on the traditional physician-patient relationship.

I promise to be brief in my message to you. I want to discuss with you the "health" of the organization you and I represent and the "prescription" I have for us.

Certainly, the Society has had a long and healthy life with a good record of achievement. From the first major accomplishment in 1878 of creating a State Board of Health, the Society has continually been involved in projects dedicated to improving medical care for our citizens. The State Board of Health was created to control a yellow fever epidemic. Many of you will remember a similar public health project when the profession united in a mass polio immunization campaign. But, we have been active in areas other than public health. For example, the Society recognized the necessity for physician involvement in politics and organized the Arkansas Medical Political Action Committee. To enable local physician control of Government-mandated quality care review, the Society organized the Arkansas Foundation for Medical Care to handle PSRO. While there has not been total support of either the concept or the implementation of the PSRO program, it has surely been made more acceptable by physician involvement. Another organization created by the Society is the Medical Education Foundation for Arkansas. Part of your dues dollar goes to support that Foundation. You can be proud of what it is doing. Currently, MEFFA is sponsoring a series of lectures for students at the University of Arkansas College of Medicine. This

program brings in well-known speakers in various fields to address the students on subjects of interest to them. It has been very well received and is improving the image of the Society with the medical students. You will also recall that the Society worked diligently for several years to get the Government to change from five areas to one area in Medicare reimbursement determinations. These efforts, as you know, were successful. The Society does work for you. It is a necessary organization and is worthy of everyone's support. Over 100 years of age, the Society has stood the test of time. There has always been differences of opinion among the members, but when the Council or House of Delegates studied a subject and established a position, the opponents usually accepted the decision and joined the rest of the Society in going forward with its programs. We were united.

The last couple of years have been unusual ones in the history of the Arkansas Medical Society. They have been difficult years. The membership has been divided on a number of issues. Decisions have been reached on numerous occasions only to be challenged at the next meeting. Such challenges have consumed our thoughts, time, and energy at the expense of constructive planning and forward progress. We should honor the decisions we reach and ask the minority who disagree to accept those decisions so that we can go on to other things. We must be united to prevent outside threats from destroying the most cherished concepts of our private practice of medicine. We cannot survive without unity.

At the time of the 1979 winter meeting of the Society, the profession was faced with several issues which I felt were really crucial to organized medicine. We were faced with new regulations for nurse practitioners. The State Health Department was embarking on a program for rural health care delivery. The United States Congress had just rejected a hospital cost containment measure which would have affected how we practice. All of these items could have a very real impact on the profession. Yet, the Society spent very little time and gave very little consideration to the ramifications of these various issues.

The issue to which we devoted most of the meeting time, and seemingly all of our emotional involvement, was the one of district representation on the Council. It bothers me that this



Dr. Kemal Kutait of Fort Smith makes his inaugural address at the banquet on Tuesday, April 22, 1980.

"internal" issue is more important than all of the "external" influences and problems.

I am reminded of the adage, "if a house be divided against itself, that house cannot stand". We cannot achieve any of our goals if we are not united in our efforts. We must all be team players. We can be constructively critical, but let's not be destructively critical.

We should, and at least occasionally must, subordinate our personal preferences for the good of the profession and the survival of the Arkansas Medical Society.

Our present circumstances bring to mind a passage from Charles Dickens' "A Tale of Two Cities:"

"It was the best of times,  
it was the worst of times,  
it was the age of wisdom,  
it was the age of foolishness,  
it was the epoch of belief,  
it was the epoch of incredulity,  
it was the season of light,  
it was the season of darkness,



it was the spring of hope,  
it was the winter of despair,  
we had everything before us —  
we had nothing before us.”

Did Dickens have Arkansas medicine of the 1980's in mind when he wrote that particular passage? Surely not, but that passage has made me stop, think, and reevaluate our purpose in life as members of the Arkansas Medical Society.

Let us review the purposes of the Society. Stated generally, we are united to advance medical science, to secure enactment of good laws, to enlighten public opinion, to maintain high ethical standards, and to protect the members against imposition. We must recommit ourselves to these purposes. We must work together, unselfishly, to accomplish good for the people of the State, both for our physician members and the public at large. Bacon once wrote: “I hold every man a debtor to his profession; that as he doth expect to receive countenance and profit therefrom, so ought he endeavor to be a help and ornament thereto”.

The medical profession is expected to provide leadership in health and medical matters. We must provide that leadership in every possible way. We must put forth a united front on issues. We must take a positive approach. In our dealings with allied groups, representatives of Government, and others, we should emphasize our concern for the public—our patients. While there will surely be proposals which we must oppose, a good working relationship in a positive vein will certainly make the task easier. Along this line, I feel that the Society should guard against being “crisis” oriented. We cannot be just “reactors”, putting out fires after they have started. We need to plan strategy and be prepared ahead of time. We must not repeatedly be forced into a defensive posture. We must not repeatedly be forced into opposing, of being against solutions or plans of others. We not only must be positive, we not only must be in favor of high quality, readily available and affordable health care, we must also convince the public and the politicians that this is where we stand.

To convince the public and the politicians that we recognize the problems of health care and its delivery, and that we are addressing these problems and making progress toward their solutions, will require a concerted effort on our behalf. After having sought the counsel of Cliff Long, Leah Richmond, Ken LaMastus, and many of you, I have written a prescription. It has three parts,

and if used according to directions, should improve our state of well being. First, I propose to establish an official Society position in several areas of interest to us and to the public. These topics and our positions on them will include such areas of interest as physician extenders, health manpower, environmental health, rural medical care, National Health Insurance, alcohol and drug abuse, school health education, HMO's, physician advertising, health care costs, the impaired physician, and other topics. I intend to appoint a committee to address these and other issues. This committee will have broad representation of physicians, by field of practice, geographic location, as well as by representation on other boards and commissions. I will ask them to present to the Council for its approval their specific comments on what will hopefully become the Society's official position on these issues. I will request that these statements reflecting our position be widely disseminated to physicians, health educators, allied professionals, college and high school libraries, legislators, and other interested parties.

The second part of my prescription deals with being prepared ahead of time and preventing serious complications. It emphasizes the need for each of us to join and become active in our Arkansas Medical Political Action Committee. Only a very small percentage of the members of the Society are currently supporting Ark-PAC. This is an election year. Ark-PAC and AMPAC support candidates who support the free enterprise system in constitutional government and who resist the encroachment and interference of government into the lives of its citizens. Good men and women in government at the National and State levels are important. Having good legislators is basic in getting reasonable legislation. Legislation can and does affect how we practice medicine. I urge you to contribute to Ark-PAC so that we may work together in supporting candidates who are for the free enterprise system.

The third and final part of my prescription allows us to evaluate ourselves and see what other treatment is necessary to attain a good state of health and, once attained, to maintain it. I believe that the leaders of the Society should get together for what is commonly referred to as a “think tank” session. A review and analysis session. We need to take a look at our organization's accomplishments. How are we doing with regard to our stated purposes? What do we want to accomplish?



# THE INAUGURAL BANQUET



Immediate Past President A. E. Andrews receives a plaque of appreciation for his service to the Arkansas Medical Society.



Immediate past president A. E. Andrews acknowledges tribute of the audience for his service as president.



Master of Ceremonies for the inaugural banquet, A. E. Andrews, gives instructions to incoming president Kemal Kutait.



A. E. Andrews joins other members in ovation given the new president, Kemal Kutait, following his inaugural address.

What is needed from the membership? What is required of the officers? What does the membership want of the Council? Of the House of Delegates? We need to evaluate where we stand and rededicate ourselves to the purposes for which we were organized. I promise you that, for my part, I will extend the olive branch of peace to those who disagree with me. I will make a determined effort to achieve unity on the Council and throughout the Society. I ask no more of you.

The Society is worthy of the support of every one of us. The rule of every worthwhile man is that no serious job shall receive less than his best thought and effort. I assure you that I shall give the Society my best thought and effort during the next year. I hope that each and every one of you will do the same.

Members attending the banquet gave President Kutait a standing ovation following his address.

Following the banquet, the Conrad Wilson Orchestra played for dancing in the hotel ballroom.

## REGISTRATION FIGURES

### 104th Annual Session

Physicians .....	395
Medical Students .....	5
Scientific Exhibitors .....	21
Commercial Exhibits .....	110
Auxiliary .....	19
Others .....	11
	—
	561
Auxiliary Registration .....	96



**OFFICERS OF THE ARKANSAS MEDICAL SOCIETY 1980-1981**

President .....	Kemal Kutait, 1120 Lexington, Fort Smith 72901
President-elect .....	Purcell Smith, Jr., P. O. Box 5675, Little Rock 72215
First Vice President .....	Richard O. Martin, P. O. Box 339, Paragould 72450
Second Vice President .....	Frank E. Morgan, 410 Pershing Blvd., North Little Rock 72114
Third Vice President .....	Harold D. Purdy, 6924 Geyer Springs Road, Little Rock 72209
Secretary .....	Elvin Shuffield, 110 Doctors Park Bldg., Little Rock 72205
Treasurer .....	Kenneth R. Duzan, 443 West Oak, El Dorado 71730
Speaker, House of Delegates .....	Amail Chudy, 1801 Maple, North Little Rock 72114
Vice Speaker of House .....	W. P. Phillips, P. O. Box 3507, Fort Smith 72913
Journal Editor .....	Alfred Kahn, Jr., 1300 West Sixth, Little Rock 72201
Delegates to AMA .....	Joe Verser, P. O. Box 106, Harrisburg 72432 T. E. Townsend, 1420 West 43rd, Pine Bluff 71603
Alternates .....	A. E. Andrews, P. O. Box 689, Texarkana 75501 Richard Pearson, 1223 West Walnut, Rogers 72756
Executive Vice President .....	C. C. Long, P. O. Box 1208, Fort Smith 72902

**EXECUTIVE COMMITTEE OF THE COUNCIL**

Chairman of the Council .....	John P. Burge, Lake Village Clinic, Lake Village 71653
President .....	Kemal Kutait, 1120 Lexington, Fort Smith 72901
President-elect .....	Purcell Smith, Jr., P. O. Box 5675, Little Rock 72215
Secretary .....	Elvin Shuffield, 110 Doctors Park Bldg., Little Rock 72205

**COUNCILORS**

Dis- trict	Councilor Term Expires 1981	Councilor Term Expires 1982	Counties in District
1.	*Merrill J. Osborne 1533 North 10th Blytheville 72315	Asa A. Crow #1 Medical Drive Paragould 72450	Clay, Craighead, Crittenden, Fulton, Greene, Lawrence, Mississippi, Poinsett, Randolph, and Sharp
2.	*Paul Gray P. O. Box 2437 Batesville 72501	John E. Bell 1300 South Main Searcy 72143	Cleburne, Conway, Faulkner, Independence, Izard, Jackson, Stone, and White
3.	John Hestir P. O. Drawer 512 DeWitt 72012	*L. J. P. Bell 626 Poplar Helena 72342	Arkansas, Cross, Lee, Lonoke, Monroe, Phillips, Prairie, St. Francis, and Woodruff
4.	*Raymond Irwin 1220 West 42nd Pine Bluff 71603	John P. Burge Lake Village Clinic Lake Village 71653	Ashley, Chicot, Desha, Drew, Jefferson, and Lincoln
5.	*George Warren P. O. Box W Smackover 71762	Cal R. Sanders P. O. Box 757 Camden 71701	Bradley, Calhoun, Cleveland, Columbia, Dallas, Ouachita, and Union
6.	Donald L. Duncan 300 East 6th Texarkana 75502	*C. Lynn Harris P. O. Box 687 Hope 71801	Hempstead, Howard, Lafayette, Little River, Miller, Nevada, Pike, Polk, and Sevier
7.	R. Jerry Mann 416 Main Street Arkadelphia 71923	*Robert F. McCrary 505 West Grand Hot Springs 71901	Clark, Garland, Grant, Hot Spring, Montgomery and Saline
8.	*W. Ray Jonett 750 Med. Towers Bldg. Little Rock 72205	William N. Jones 500 S. University Little Rock 72205	Pulaski

# PROCEEDINGS

9.	*Morris M. Henry P. O. Box 1727 Fayetteville 72701	Rhys A. Williams P. O. Box 1118 Harrison 72601	Baxter, Benton, Boone, Carroll, Madison, Marion, Newton, Searcy, Van Buren, and Washington
10.	*Charles F. Wilkins 3105 West Main Place Russellville 72801	Ken Lilly 1120 Lexington Fort Smith 72901	Crawford, Franklin, Johnson, Logan, Perry, Pope, Scott, Sebastian, and Yell

\*Senior Councilor

## 1980 OFFICERS—COUNTY MEDICAL SOCIETIES—ARKANSAS MEDICAL SOCIETY

ARKANSAS	Pres.—Gerald L. Guyer, Route 1, Box 21-D, Stuttgart 72160 Secy.—Gerald L. Guyer, Route 1, Box 21-D, Stuttgart 72160
ASHLEY	Pres.— Secy.—
BAXTER	Pres.—James S. Beckman, P. O. Box 276, Mountain Home 72653 Secy.—Thomas L. Eans, 126 West 6th, Mountain Home 72653 Asst. Secy.—Julie Short, 126 West 6th, Mountain Home 72653
BENTON	Pres.—John Garrett, P. O. Box 369, Gravette 72736 Secy.—John Huskins, P. O. Box 737, Rogers 72756
BOONE	Pres.—Richard M. Kuharich, 651 North Spring, Harrison 72601 Secy.—Sue R. Chambers, Bower at Pine, Harrison 72601 Asst. Secy.—Mrs. Richard M. Kuharich, 651 N. Spring, Harrison 72601
BRADLEY	Pres.—W. C. Whaley, Jr., 205 East Church, Warren 71671 Secy.—Merl T. Crow, 205 East Church, Warren 71671
CHICOT	Pres.—W. J. Weaver, P. O. Box Q, Eudora 71640 Secy.—Major E. Smith, P. O. Box 310, Dermott 71638
CLARK	Pres.—R. Jerry Mann, 416 Main, Arkadelphia 71923 Secy.—George R. Peeples, 305 East Main, Gurdon 71743
CLEBURNE	Pres.—Joe B. Scruggs, P. O. Box 510, Heber Springs 72543 (Acting) Secy.—Joe B. Scruggs, P. O. Box 510, Heber Springs 72543
COLUMBIA	Pres.—Charles H. Weber, 110 West North, Magnolia 71753 Secy.—Robert W. Hunter, 2602 Crestview, Magnolia 71753
CONWAY	Pres.—Allen R. Rozzell, 601 South Moose, Morrilton 72110 Secy.—Keith M. Lipsmeyer, P. O. Box 677, Morrilton 72110
CRAIGHEAD-POINSETT	Pres.—John B. Kirkley, P. O. Box 1458, Jonesboro 72401 Secy.—J. Kenneth Aston, 3021 Stadium Boulevard, Jonesboro 72101 Asst. Secy.—Sherry Hannah, c/o Dr. Aston (Address shown above)
CRAWFORD	Pres.—L. Gordon Sasser, P. O. Box 478, Alma 72921 Secy.—Francis E. Shearer, P. O. Box 458, Alma 72921
CRITTENDEN	Pres.—W. J. Wright, 1605 Second Street, Earle 72331 Secy.—Sidney W. Arnold, 288 Tyler, West Memphis 72301 Treas.—Keith B. Kennedy, 316 Tyler, West Memphis 72301
CROSS	Pres.—John H. Young, P. O. Box E, Wynne 72396 Secy.—Vance J. Crain, P. O. Box 158, Wynne 72396
DALLAS	Pres.—John H. Delamore, P. O. Box 351, Fordyce 71742 Secy.—Hugh A. Nutt, P. O. Box 506, Fordyce 71742
DESHA	Pres.—Guy U. Robinson, 207 South Elm, Dumas 71639 Secy.—Howard R. Harris, 207 South Elm, Dumas 71639
DREW	Pres.—L. K. Austin, 711 H. L. Ross Drive, Monticello 71655 Secy.—Andrew E. David, 750 H. L. Ross Drive, Monticello 71655 Asst. Secy.—Betty Evans, P. O. Box 538, Monticello 71655
FAULKNER	Pres.—Bob G. Banister, 923 Parkway, Conway 72032 (Acting) Secy.—Bob G. Banister, 923 Parkway, Conway 72032
FRANKLIN	Pres.—David L. Gibbons, P. O. Box 136, Ozark 72949 Secy.—Rebecca Ewing, 664 West Commercial, Ozark 72949



# PROCEEDINGS

GARLAND .....	Pres.—M. R. Springer, Jr., 901 West Grand, Hot Springs 71901 Secy.—Robert F. McCrary, 505 West Grand, Hot Springs 71901 Asst. Secy.—Mary Payne, 901 West Grand, Hot Springs 71901
GRANT .....	Pres.—Clyde D. Paulk, 1000 West Vine, Sheridan 72150 Secy.—Clyde D. Paulk, 1000 West Vine, Sheridan 72150
GREENE-CLAY .....	Pres.—Bennie E. Mitchell, 901 West Kingshighway, Paragould 72450 Secy.—George A. Hobby, #1 Medical Drive, Paragould 72450
HEMPSTEAD .....	Pres.—David G. Stevens, Route 4, Box 238-S, Hope 71801 Secy.—George C. Garrett, Jr., 405 West 16th, Hope 71801
HOT SPRING .....	Pres.—Larry B. Brashears, 1234 South Main, Malvern 72104 Secy.—Russell W. Cobb, 1420 Potts, Malvern 72104
HOWARD-PIKE .....	Pres.—Joe D. King, P. O. Box 549, Nashville 71852 Secy.—Samuel W. Peebles, 120 West Sybert, Nashville 71852
INDEPENDENCE .....	Pres.—John M. Hill, Jr., 17th & Harrison, Batesville 72501 Secy.—John G. Scott, P. O. Box 2116, Batesville 72501
JACKSON .....	Pres.— Secy.—
JEFFERSON .....	Pres.—C. M. Rittelmeyer, 1716 West 42nd, Pine Bluff 71603 Secy.—Horace L. Green, 1420 West 43rd, Pine Bluff 71603 Asst. Secy.—Sherry Freyer, 1515 West 42nd, Pine Bluff 71603
JOHNSON .....	Pres.—Richard E. McKelvey, P. O. Box 440, Clarksville 72830 Secy.—Boyce W. West, P. O. Box 220, Clarksville 72830
LAFAYETTE .....	Pres.—Willie J. Lee, P. O. Box 276, Stamps 71860 Secy.—Craig E. Ditsch, P. O. Box 276, Stamps 71860
LAWRENCE .....	Pres.—Ted S. Lancaster, P. O. Box 150, Walnut Ridge 72476 Secy.—J. B. Elders, 321 Southwest 3rd, Walnut Ridge 72476
LEE .....	Pres.—E. C. Fields, 77 West Main, Marianna 72360 Secy.—E. C. Fields, 77 West Main, Marianna 72360
LITTLE RIVER .....	Pres.—Joe G. Shelton, Jr., P. O. Box 397, Ashdown 71822 Secy.—James D. Armstrong, P. O. Box 397, Ashdown 71822
LOGAN .....	Pres.—Guy Ulrich, 1012 East Walnut, Paris 72855 Secy.—James T. Smith, P. O. Box 286, Paris 72855
LONOKE .....	Pres.—Willie R. Harris, P. O. Box 40, England 72046 Secy.—Byron E. Holmes, 305 West Front, Lonoke 72086
MILLER .....	Pres.—Frederick E. Joyce, P. O. Box 2763, Texarkana 75501 Secy.—Larry M. Peebles, P. O. Box 689, Texarkana 75501 Exec. Secy.—Arlene Rushan, P. O. Box 1843, Texarkana 75501
MISSISSIPPI .....	Pres.—George D. Pollock, 608 West Lee, Osceola 72370 Secy.—Eldon Fairley, P. O. Box 68, Osceola 72370
MONROE .....	Pres.—Walter L. Walker, 114 South New Orleans, Brinkley 72021 Secy.—Robert T. Miya, 106 New York Street, Brinkley 72021
NEVADA .....	Pres.—Richard P. Portis, P. O. Box 442, Prescott 71857 Secy.—Michael C. Young, P. O. Box 442, Prescott 71857
OUACHITA .....	Pres.—Richard F. Plant, 530 Jefferson Drive, Camden 71701 Secy.—L. V. Ozment, P. O. Box 757, Camden 71701
PHILLIPS .....	Pres.—H. N. Faulkner, 513 Porter, Helena 72342 Secy.—L. J. Patrick Bell, 626 Poplar, Helena 72342
POLK .....	Pres.—David P. Hefner, 518 Janssen, Mena 71953 Secy.—Henry N. Rogers, 600 7th Street, Mena 71953
POPE .....	Pres.—Joe B. Crumpler, 3105 West Main Place, Russellville 72801 Secy.—W. E. King, Jr., 3105 West Main Place, Russellville 72801
PULASKI .....	Pres.—W. Ray Jouett, 750 Medical Towers Bldg., Little Rock 72205 Secy.—Kelsy J. Caplinger, III, P. O. Box 5675, Little Rock 72215 Exec. Scy.—Paul Harris, 500 S. University, #311, Little Rock 72205

# PROCEEDINGS

RANDOLPH	Pres.—Thomas B. DeClerk, 204 Thomasville, Pocahontas 72455 Secy.—Danny B. Holt, 110 West Broadway, Pocahontas 72455
SALINE	Pres.—David L. Stewart, 205 West Carpenter, Benton 72015 Secy.—R. A. Council, Jr., 910 North East, Benton 72015
SCOTT	Pres.—Harold B. Wright, P. O. Box 249, Waldron 72958 Secy.—Harold B. Wright, P. O. Box 249, Waldron 72958
SEBASTIAN	Pres.—Charles W. Bailey, P. O. Box 426, Greenwood 72936 Secy.—R. Gene Girkin, 922 Lexington, Fort Smith 72901 Asst. Secy.—Betty Stipsky, P. O. Box 3528, Fort Smith 72913
SEVIER	Pres.—N. L. Dodd, P. O. Box 312, DeQueen 71832 Secy.—Kevin R. Carlson, 4th and Heynecker, DeQueen 71832 Exec. Secy.—Jim E. Pearce, Highway 70 West, DeQueen 71832
ST. FRANCIS	Pres.—J. Neal Laney, 1740 Lindauer Road, Forrest City 72335 Secy.—Brian Hawley, P. O. Box 4000, Forrest City 72335
UNION	Pres.—Robert L. Parkman, Jr., 460 West Oak, El Dorado 71730 Secy.—Jean F. Wise, 304 Thompson, El Dorado 71730
VAN BUREN	Pres.—Charles G. Pearce, P. O. Box 51, Clinton 72031 Secy.—John A. Hall, P. O. Box 310, Clinton 72031
WASHINGTON	Pres.—James Haynes, 207 East Dickson, Fayetteville 72701 Secy.—Murray Harris, P. O. Box 1286, Fayetteville 72701
WHITE	Pres.—Kenneth R. Meacham, 1300 South Main, Searcy 72143 Secy.—Hugh R. Edwards, 1300 South Main, Searcy 72143
WOODRUFF	Pres.—Fred E. Wilson, P. O. Box 357, McCrory 72101 Secy.—James E. Rowe, P. O. Box 357, McCrory 72101
YELL	Pres.—Walter P. Harris, P. O. Box 487, Danville 72833 Secy.—Jerry F. Hodges, Highway 22 West, Dardanelle 72834

## COMMITTEES—ARKANSAS MEDICAL SOCIETY—1980-1981

	Term Expires		Term Expires
COMMITTEE ON CANCER CONTROL		James L. Maupin, P. O. Box 337, Dardanelle 72834	1983
Wayne H. Schultz, P. O. Box 1998, El Dorado 71730	1981	Donald L. Toon, 315 North Alabama, Crossett 71635	1983
Herbert B. Wren, P. O. Box 1409, Texarkana 75501	1982	SUB-COMMITTEE ON NATIONAL LEGISLATION	
Jean C. Gladden, P. O. Box 1118, Harrison 72601	1982	Richard N. Pearson, 1223 West Walnut, Rogers 72756	1981
Arthur E. Squire, Jr., 10001 Lile Drive, Little Rock 72205	1983	James M. Kolb, Jr., 305 Skyline Drive, Russellville 72801	1981
John R. Broadwater, 1500 Dodson, Fort Smith 72901 — <i>CHAIRMAN</i>	1983	W. P. Phillips, P. O. Box 3507, Fort Smith 72913 — <i>CHAIRMAN</i>	1982
COMMITTEE ON MEDICAL LEGISLATION		W. Payton Kolb, 230 Medical Towers Building, Little Rock 72205	1983
James R. Weber, P. O. Box 188, Jacksonville 72076 — <i>CHAIRMAN</i>	1981	George W. Warren, P. O. Box W, Smackover 71762	1983
Joe Verser, P. O. Box 106, Harrisburg 72432	1981	COMMITTEE ON PUBLIC HEALTH	
Boyce W. West, P. O. Box 220, Clarksville 72830	1981	William C. Whaley, Jr., 205 East Church, Warren 71671	1981
John E. Bell, 1300 South Main, Searcy 72143	1982	Wilbur G. Lawson, 207 East Dickson, Fayetteville 72701	1981
Frederick E. Joyce, P. O. Box 2763, Texarkana 75503	1982	Ben N. Saltzman, 4301 West Markham, Slot 592, Little Rock 72201 — <i>CHAIRMAN</i>	1982
Robert McCrary, 505 West Grand, Hot Springs 71901	1982	Ruth C. Steinkamp, 409 Fairfax Avenue, Little Rock 72205	1982
Morris M. Henry, P. O. Box 1727, Fayetteville 72701	1983	T. E. Townsend, 1420 West 43rd, Pine Bluff 71603	1983



# PROCEEDINGS

	Term Expires		Term Expires
A. E. Andrews, P. O. Box 689, Texarkana 75501	1983	James R. Weber, P. O. Box 188, Jacksonville 72076	1983
A. Samuel Koenig, III, 922 Lexington, Fort Smith 72901	1983	Howard M. Armstrong, 340 Doctors Park Building, Little Rock 72205 — <i>CHAIRMAN</i>	1983
SUB-COMMITTEE ON MATERNAL AND CHILD WELFARE		COMMITTEE ON MENTAL HEALTH	
Virgil L. Hayden, 1706 West 42nd, Pine Bluff 71603	1981	Robert G. Carnahan, 4313 West Markham, Little Rock 72205	1981
E. A. Shaneyfelt, P. O. Box 630, Manila 72442 — <i>CHAIRMAN</i>	1982	W. Payton Kolb, 230 Medical Towers Building, Little Rock 72205 — <i>CHAIRMAN</i>	1981
R. Kingsley Bost, 3105 West Main Place, Russellville 72801	1983	William Joe James, P. O. Box 1019, Pine Bluff 71613	1981
Robert W. Arrington, 1721 Maryland, Little Rock 72202	1983	David D. Fried, Northside Shopping Center, Mena 71953	1982
SUB-COMMITTEE ON TUBERCULOSIS		Randolph Murphy, 4313 West Markham, Little Rock 72205	1982
Jim C. City, 2900 Hawkins Drive, Searcy 72143	1981	Henry H. Good, #1 St. Vincent Circle, Suite #340, Little Rock 72205	1982
Lawrence C. Price, P. O. Box 3006, Fort Smith 72913	1981	A. Pat Chambers, 1500 Dodson, Fort Smith 72901	1983
Wade A. Hart, Route 4, Box 327, Blytheville 72315	1982	John B. Simpson, 1705 Central Avenue, Hot Springs 71901	1983
Jerry R. Stewart, P. O. Box 3528, Fort Smith 72913	1982	IMMUNIZATION SUB-COMMITTEE	
John C. Schultz, 10001 Lile Drive, Little Rock 72205	1983	Horace L. Green, 1420 West 43rd, Pine Bluff 71603	1981
Donald L. Miller, 1515 West 42nd, Pine Bluff 71603 — <i>CHAIRMAN</i>	1983	Henry B. Rogers, 209 Thompson, El Dorado 71730	1981
COMMITTEE ON AGING		Daniel C. McKinney, 1420 West 43rd, Pine Bluff 71603 — <i>CHAIRMAN</i>	1981
Woodbridge Morris, 5326 West Markham, #13, Little Rock 72205	1981	Betty Lowe, 801 Wolfe Street, Little Rock 72201	1982
Chalmers S. Pool, 3925 North Lookont, Little Rock 72205 — <i>CHAIRMAN</i>	1982	Jon D. Hall, 300 East Sixth, Texarkana 75501	1982
Charles W. Bailey, P. O. Box 426, Greenwood 72936	1982	James M. Post, 617 South 16th, Fort Smith 72901	1983
John F. Guentlmer, 126 West Sixth, Mountain Home 72653	1983	SUB-COMMITTEE ON TRAFFIC SAFETY	
Henry V. Kirby, 651 North Spring, Harrison 72601	1983	James G. Stuckey, Jr., 500 South University, Little Rock 72205	1981
SUB-COMMITTEE ON PHYSICAL FITNESS AND SCHOOL HEALTH		H. Austin Grimes, P. O. Box 5270, Little Rock 72215	1981
W. John Giller, Jr., 516 West Faulkner, El Dorado 71730	1981	Thomas A. Pullig, 805 North Jackson, Magnolia 71753	1981
Clarence E. Ballard, Jr., 250 Doctors Park Building, Little Rock 72205	1982	George V. Roberson, Jr., 1801 West 40th, Pine Bluff 71603	1981
Rex N. Moore, P. O. Box 459, Jacksonville 72076	1982	Carl L. Williams, 522 South 16th, Fort Smith 72901 — <i>CHAIRMAN</i>	1982
Tom P. Coker, P. O. Drawer 1608, Fayetteville 72701 — <i>CHAIRMAN</i>	1983	Albert D. MacDade, 1500 Dodson, Fort Smith 72901	1983
John H. Delamore, P. O. Box 351, Fordyce 71742	1983	SUB-COMMITTEE ON LIAISON WITH VOCATIONAL REHABILITATION	
SUB-COMMITTEE ON INDUSTRIAL HEALTH		W. Ray Jonett, 750 Medical Towers Building, Little Rock 72205	1981
I. Leighton Millard, P. O. Box 5270, Little Rock 72215	1981	Thomas M. Durham, Jr., 505 West Grand, Hot Springs 71901	1981
Howard Schwander, 320 Doctors Park Building, Little Rock 72205	1981	John P. Wood, 907 Mena Street, Mena 71953 — <i>CHAIRMAN</i>	1982
Henry W. Keisker, Jr., 505 East Matthews, Jonesboro 72401	1982	Karlton H. Kemp, 408 Hazel, Texarkana 75502	1982
Michael C. Reese, 1110 West Elm, Rogers 72756	1982	Charles E. Tommey, 412 North Washington, El Dorado 71730	1983

# PROCEEDINGS

	Term Expires		Term Expires
Robert D. Miller, Jr., 616 Elm Street, Helena 72342	1983	Glenn V. Dahymple, 1100 Medical Towers Building, Little Rock 72205	1982
Jim E. Lytle, P. O. Box 2116, Batesville 72501	1983	Neil E. Crow, P. O. Box 1612, Fort Smith 72902	1983
COMMITTEE ON CONTINUING MEDICAL EDUCATION		ADVISORY COMMITTEE TO THE MEDICAL ASSISTANTS SOCIETY	
Glenn P. Schoettle, 308 South Rhodes, West Memphis 72301	1981	Jack J. Sternberg, 500 South University, Suite 725, Little Rock 72205	1982
Gilbert Dean, 1310 Cantrell Road, Little Rock 72202	1981	James D. Mashburn, 207 East Dickson, Fayetteville 72701	1983
John H. Hestir, P. O. Drawer 512, DeWitt 72042 — <i>CHAIRMAN</i>	1982	C. W. Jackson, P. O. Box C, Judsonia 72081	1983
Jerry C. Holton, 500 South University, Little Rock 72205	1982	Jerry C. Holton, 500 South University, Little Rock 72205 — <i>CHAIRMAN</i>	1983
Lee B. Parker, Jr., 241 West Spring, Fayetteville 72701	1983	COMMITTEE ON INSURANCE	
Thomas A. Bruce, 4301 West Markham, Little Rock 72201	1983	Harry Hayes, Jr., #1 St. Vincent Circle, Suite 310, Little Rock 72205	1981
Taylor A. Prewitt, P. O. Box 3528, Fort Smith 72913	1983	Banks Blackwell, 1400 West 43rd, Pine Bluff 71603	1981
COMMITTEE ON HOSPITALS		Francis Wilson, 505 East Matthews, Jonesboro 72401	1982
Paul N. Means, 1150 Medical Towers Building, Little Rock 72205	1981	Guy Farris, 6213 Lee Avenue, Little Rock 72205	1982
John D. Wright, 321 Short Street, Benton 72015	1981	Charles F. Wilkins, Jr., 3105 West Main Place, Russellville 72801 — <i>CHAIRMAN</i>	1983
Robert B. Benafield, P. O. Box 2181, Little Rock 72203	1982	David D. Fried, Northside Shopping Center, Mena 71953	1983
G. Max Thorn, St. Vincent Infirmary, Little Rock 72201 — <i>CHAIRMAN</i>	1982	COMMITTEE ON MEDICINE AND RELIGION	
Evans Z. Hornberger, Jr., 1311 South "I", Fort Smith 72901	1983	Lawson E. Glover, 10001 Lile Drive, Little Rock 72205	1981
Paul L. Rogers, 318 North Greenwood, Fort Smith 72901	1983	Randolph Murphy, 4313 West Markham, Little Rock 72205	1981
COMMITTEE ON PUBLIC RELATIONS		Kenneth Lilly, 1120 Lexington, Fort Smith 72901	1981
A. C. Bradford, P. O. Box 3528, Fort Smith 72913	1981	Milton D. Deneke, P. O. Box 687, West Memphis 72301	1981
W. Ray Jouett, 750 Medical Towers Building, Little Rock 72205	1981	Charles G. Swingle, P. O. Box 267, Marked Tree 72365	1982
G. Thomas Jansen, 500 South University, Little Rock 72205	1982	Norman K. Smith, 107 Van Bibber, Pocahontas 72455	1982
T. E. Townsend, 1420 West 43rd, Pine Bluff 71603	1982	Fred O. Henker, III, 4301 West Markham, Little Rock 72201 — <i>CHAIRMAN</i>	1983
Raymond V. Biondo, P. O. Box 921, North Little Rock 72215	1982	Walter H. O'Neal, 9600 West 12th, Little Rock 72201	1983
Ronald J. Bracken, 505 West Grand, Hot Springs 71901	1983	COMMITTEE ON ARRANGEMENTS FOR ANNUAL SESSION	
Milton D. Deneke, P. O. Box 687, West Memphis 72301 — <i>CHAIRMAN</i>	1983	Thomas A. Bruce, 4301 West Markham, Little Rock 72201	1981
SUB-COMMITTEE ON LIAISON WITH THE AUXILIARY		Neil H. Sims, 4301 West Markham, Little Rock 72201	1981
Warren C. Boop, Jr., 4301 West Markham, Little Rock 72201 — <i>CHAIRMAN</i>	1981	John H. Delamore, P. O. Box 351, Fordyce 71742	1981
Raymond E. Peeples, 310 Park, Hot Springs 71901	1981	Richard O. Martin, P. O. Box 339, Paragould 72450	1982
W. Ray Jonett, 750 Medical Towers Building, Little Rock 72205	1981	Kenneth Lilly, 1120 Lexington, Fort Smith 72901	1982
Samuel E. Landrum, 522 South 16th, Fort Smith 72901	1981	J. Larry Lawson, #1 Medical Drive, Paragould 72450	1982
SUB-COMMITTEE ON STATE HEALTH AND MEDICAL RESOURCES FOR CIVIL DEFENSE			
Alvin Strauss, Jr., 1026 Donaghey Building, Little Rock 72201	1981		



	Term Expires	AD HOC COMMITTEE ON LIAISON WITH HEALTH SYSTEMS AGENCIES
R. W. Ross, 1120 Lexington, Fort Smith 72901	1983	Kemal Kutait, 1120 Lexington, Fort Smith 72901 — <i>CHAIRMAN</i>
Frank E. Morgan, 410 Pershing Boulevard, North Little Rock 72114 — <i>CHAIRMAN</i>	1983	John Crenshaw, 4201 Mulberry, Pine Bluff 71603
John M. Hestir, P. O. Drawer 512, DeWitt 72042	1983	William Joe James, P. O. Box 1019, Pine Bluff 71613
C. Lynn Harris, P. O. Box 687, Hope 71801	1983	Malcolm Moore, 500 South University, Little Rock 72205
Paul A. Wallick, P. O. Box 660, Monticello 71655	1983	James Guthrie, P. O. Box 757, Camden 71701
<b>COUNCIL COMMITTEES</b>		Kenneth R. Duzan, 443 West Oak, El Dorado 71730
<b>PHYSICIAN-NURSE JOINT PRACTICE COMMITTEE</b>		Bob G. Banister, 923 Parkway, Conway 72032
Jerry Holton, 500 South University, Little Rock 72205 — <i>CHAIRMAN</i>		Roger B. Bost, 4301 West Markham, Slot 599, Little Rock 72201
A. T. Gillespie, 500 South University, Little Rock 72205		Warren M. Douglas, 260 Medical Towers Building, Little Rock 72205
Charles E. Tommey, 412 North Washington, El Dorado 71730		Willie R. Harris, P. O. Box 40, England 72046
Charles W. Logan, 500 South University, Little Rock 72205		W. Payton Kolb, 230 Medical Towers Building, Little Rock 72205
Kemal Kutait, 1120 Lexington, Fort Smith 72901		Gordon P. Oates, 1700 West 13th, Little Rock 72202
<b>COMMITTEE ON CONSTITUTIONAL REVISION</b>		James M. Stalker, P. O. Box 2575, Batesville 72501
A. S. Koenig, Jr., 922 Lexington, Fort Smith 72901 — <i>CHAIRMAN</i>		Robert E. Elliott, 1300 South Main, Searcy 72143
J. Warren Murry, 1749 North College, Box A, Fayetteville 72701		Jean C. Gladden, P. O. Box 1118, Harrison 72601
Nathan L. Poff, 401 West Searcy, Heber Springs 72543		A. S. Koenig, Jr., 922 Lexington, Fort Smith 72901
	Term Expires Nov.	James L. Gardner, 125 Greenwood, Hot Springs 71901
<b>BUDGET COMMITTEE</b>		Don B. Vollman, 411 East Matthews, Jonesboro 72401
Kenneth Lilly, 1120 Lexington, Fort Smith 72901 — <i>CHAIRMAN</i>	1980	Mary W. Hughes, 1001 Main, Texarkana 75501
K. R. Duzan, 443 West Oak, El Dorado 71730	Term automatic as treasurer	
William N. Jones, 500 South University, Little Rock 72205	1981	<b>REPRESENTATIVES TO THE COST CONTAINMENT COMMITTEE</b>
Rhys A. Williams, P. O. Box 1118, Harrison 72601	1982	W. Martin Eisele, 101 Whittington, Hot Springs 71901
Asa A. Crow, #1 Medical Drive, Paragould 72450	1983	James Weber, P. O. Box 188, Jacksonville 72076
<b>LIAISON COMMITTEE WITH STATE WELFARE DEPARTMENT</b> (Composed of Executive Committee)		Glenn Dalrymple, 1100 Medical Towers Building, Little Rock 72205
<b>MEDICAL SCHOOL COMMITTEE</b>		<b>STUDY COMMITTEE</b> (BOONE COUNTY RESOLUTION)
James L. Gardner, 125 Greenwood, Hot Springs 71901 — <i>CHAIRMAN</i>		Kemal Kutait, 1120 Lexington, Fort Smith 72901 — <i>CHAIRMAN</i>
Kemal Kutait, 1120 Lexington, Fort Smith 72901		T. E. Townsend, 1420 West 43rd, Pine Bluff 71603
Boyce West, P. O. Box 220, Clarksville 72830		William N. Jones, 500 South University, Suite 708, Little Rock 72205
Max G. Cheney, P. O. Box 725, Mountain Home 72653		Rhys A. Williams, P. O. Box 1118, Harrison 72601
R. Jerry Mann, 416 Main, Arkadelphia 71923		Paul Wallick, P. O. Box 660, Monticello 71655
		Forney G. Holt, 300 East Sixth, Texarkana 75501

# MEDICAL SERVICES REVIEW COMMITTEE

Term Expires April 30	Committee Members (Name and Address)	Specialty Represented	Term Expires April 30	Committee Members (Name and Address)	Specialty Represented
1981	James R. Weber, P. O. Box 188, Jacksonville 72076	Fam. Pr.	1981	Douglas E. Young, 9600 West 12th, Little Rock 72205	Pathology
1982	George W. Warren, P. O. Box W, Smackover 71762	Fam. Pr.	1981	James H. Buie, 1500 Dodson, Fort Smith 72901	Orthopedics
1982	Paul A. Wallick, P. O. Box 660, Monticello 71655	Fam. Pr.	1982	Frederick P. Feder, Jr., 520 Lexington, Fort Smith 72901	Urology
1981	Jack T. Fendley, 2500 McCain Place, North Little Rock 72116	Int. Med.	—	Charles F. Wilkins, Jr., 3105 W. Main Place, Russellville 72801	(Chairman)
1982	Jack L. Blackshear, 650 Medical Towers Bldg., Little Rock 72205	Int. Med.	—	Kemal Kutait, 1120 Lexington, Fort Smith 72901	(President)
1981	Rhys A. Williams, Box 1118, Harrison 72601	Surgery	—	Purcell Smith, Jr., P. O. Box 5675, Little Rock 72215	(President-elect)
1983	Samuel E. Landrum, 522 South 16th, Fort Smith 72901	Surgery	—	H. Elvin Shuffield, 110 Doctors Park Bldg., Little Rock 72205	(Secretary)
1982	Donald L. Duncan, 300 East 6th, Texarkana, TX 75502	Surgery	—	John P. Burge, Lake Village Clinic, Lake Village 71653	(Council Chairman)
1983	Thomas G. Johnston, P. O. Drawer A, Little Rock 72205	Allergy	<b>Sub-Committee Representatives</b> (Representatives on call to meet with Committee as needed when claims in specialty field are considered)		
1982	Edwin L. Coffman, 1500 Dodson, Fort Smith 72901	Anes.	Sub-Committee of Sub-Specialties		
1983	Raymond V. Biondo, P. O. Box 921, North Little Rock 72115	Derm.	Carl L. Williams, 522 South 16th, Fort Smith 72901		
1983	James L. Smith, 623 Woodlane, Little Rock 72201	Oph.	Thomas J. Smith, 409 North University, Little Rock 72205		
1983	Lloyd G. Langston, 1408 West 43rd, Pine Bluff 71603	Oto.	Thomas H. Allen, 413 North University, Little Rock 72205		
1981	Robert F. McCrary, 505 West Grand, Hot Springs 71901	Ob-Gyn	John C. Schultz, 10001 Lile Drive, Little Rock 72205		
1982	W. Ray Jouett, 750 Medical Towers Bldg., Little Rock 72205	Neurosurgery	Kelsy J. Caplinger, III, P. O. Box 5675, Little Rock 72215		
1982	Aubrey C. Smith, 12115 Hinson Road, Little Rock 72212	Psychiatry	G. Doyme Williams, 1301 West Markham, Little Rock 72201		
1981	Harry M. Harmon, 1114 Poplar Place, Rogers 72756	Pediatrics	W. R. Johnson, Jr., D.D.S., 404 Med. Arts Bldg., Hot Springs 71901		
1983		Radiology			





**PROFESSIONAL RELATIONS COMMITTEE  
ARKANSAS MEDICAL SOCIETY**

District	Name of Committee Member	Address
1	F. E. Utley, M.D.	515 North Sixth, Blytheville 72315
	B. P. Raney, M.D.	403 East Matthews, Jonesboro 72401
	T. Murray Ferguson, M.D.	200 South Rhodes, West Memphis 72301
2	C. W. Jackson, M.D.	P. O. Box C, Judsonia 72081
	Jim Lytle, M.D.	P. O. Box 2116, Batesville 72501
	Charles F. Wells, M.D.	601 South Moose, Morrilton 72110
3	John M. Hestir, M.D.	P. O. Drawer 512, DeWitt 72042
	Carl E. Northcutt, M.D.	Route 1, Box 21-D, Stuttgart 72160
	Dwight W. Gray, M.D.	110 West Chestnut, Marianna 72360
4	Howard Harris, M.D.	207 South Elm, Dumas 71639
	L. R. Turney, M.D.	101 South Third, McGehee 71654
	George Roberson, M.D.	1801 West 40th, Suite 4-C, Pine Bluff 71603
5	C. E. Tommey, M.D.	412 North Washington, El Dorado 71730
	L. V. Ozment, M.D.	353 Cash Road, Camden 71701
	Joe F. Rushton, M.D.	219 North Washington, Magnolia 71753
6	Donald Duncan, M.D.	300 East 6th, Texarkana 75502
	James G. Martindale, M.D.	116 South Main, Hope 71801
	James Armstrong, M.D.	P. O. Box 397, Ashdown 71822
7	C. F. Peters, M.D.	1420 Potts, Malvern 72104
	Robert F. McCrary, M.D.	505 West Grand, Hot Springs 71901
	Thomas M. Durham, Jr., M.D.	505 West Grand, Hot Springs 71901
8	*Richard M. Logue, M.D.	601 North University, Little Rock 72205
	John McCollough Smith, M.D.	4000 Woodlawn, Little Rock 72205
	James Rasch, M.D.	10001 Lile Drive, Little Rock 72205
9	Charles A. Ledbetter, M.D.	224 Erie, Harrison 72601
	James Y. Massey, M.D.	P. O. Drawer H, Mountain Home 72653
	James L. Pickens, M.D.	2212 West Walnut, Rogers 72756
10	Samuel Landrum, M.D.	522 South 16th, Fort Smith 72901
	David M. Williams, M.D.	809 West Main Place, Russellville 72801
	Boyce West, M.D.	P. O. Box 220, Clarksville 72830

\*Chairman





**MRS. WARREN BOOP**  
**Little Rock**  
**President 1980-1981**  
**Arkansas Medical Society Auxiliary**

**ARKANSAS MEDICAL SOCIETY AUXILIARY  
CONVENTION REPORT**

**HIGHLIGHTS**

The Fifty-Sixth Annual Session of the Arkansas Medical Society Auxiliary met at the Arlington Hotel, Hot Springs, Arkansas, April 20-22, 1980. Registration was held on the Mezzanine of the Hotel during the entire convention time. Mrs. Ron Kaler, Hot Springs, was registration chairman. A total number of ninety-six members were registered. Those registering received a chenille red heart encircling a caduceus attached to their registration name tag. At the time of registration each registrant received a plastic heart box containing paper clips, pins, and rubber bands, compliments of Dr. and Mrs. Frank E. Morgan. The theme of the convention was "Surrounding and Solidly Supporting Medicine and the Doctor."

A Joint Memorial Service with the Arkansas Medical Society was held on Sunday, April 20, at 1:00 P.M.

A Pre-Convention State Board Meeting was held in the President's Suite of the hotel at 2:30 P.M. on Sunday, April 20. Mrs. Frank E. Morgan, State President, presided and introduced the guests, Mrs. John F. Vaughan of Vancouver, Washington, President-Elect, American Medical Association Auxiliary; and Mrs. Raymond M. Yow of Salisbury, Maryland, President of Southern Medical Association Auxiliary. Mrs. Raymond Jouett, Little Rock, gave the invocation and Treasurer's Report. Mrs. Charles Wilkins presented the proposed budget for 1980-1981, which was approved. A proposal by Mrs. Wilkins for dues increase for the coming year was also approved. A memorial to the memory of Mr.



Eugene Warren was recommended to be given to AMA-ERF. The meeting then recessed until the next session. Mrs. Morgan presented ceramic heart boxes to all of the members of her board. Mrs. Warren Boop, President-elect, distributed workbooks and directories for the coming year. A delightful time of fellowship and food followed.

Members of the Auxiliary attended a reception hosted by the Council of the Arkansas Medical Society on Sunday evening, April 20, 1980.

The Past President's Breakfast was held in the Wine and Cheese Room of the Hotel on Monday morning, April 21, 1980. Mrs. Carl Wilson and Mrs. Kemal Kutait, both of Fort Smith, were co-hostesses. Favors of a stained-glass shell was given each Past President in attendance.

Mrs. Warren Boop, State President-Elect, held a breakfast and workshop for the County Presidents-Elect the same morning.

#### FIRST GENERAL SESSION

The First General Session of the Arkansas Medical Society Auxiliary was held in the Venus Room of the Hotel with Mrs. Frank E. Morgan, President, presiding. A beautiful staging of white chrysanthemums, colonial column pedestals, ferns, banners of the theme and of the Auxiliary, and banners of SOARING IN MEMBERSHIP, STEWARDS OF AMA-ERF, SOUND IN LEGISLATION, and SHAPE UP FOR LIFE, banked a large heart containing a caduceus supporting a smaller heart. The theme of the annual meeting was "SURROUNDING AND SOLIDLY SUPPORTING MEDICINE AND THE DOCTOR."

Dr. C. C. Long, Executive Vice President of the Arkansas Medical Society, and Dr. A. E. Andrews, President of the Society, were introduced. Each welcomed and thanked the Auxiliary members.

The invocation was given by Mrs. William S. Orr, Jr., State Chaplain. As members rose, the flags of the United States and Arkansas were presented by Mrs. Kemal Kutait, Southern Regional Chairman of Legislation of the American Medical Association Auxiliary, and Mrs. Gordon Oates, State Legislative Chairman. Mrs. Kutait led the Auxiliary in the pledge to the flag of the United States. Mrs. Morgan then led the Auxiliary in the pledge to the Auxiliary. Forty-five delegates were seated by the secretary, Mrs. J. C. Callaway.

Mrs. John F. Vaughan, President-Elect, Ameri-

can Medical Association Auxiliary, addressed the membership.

The following Convention Chairmen were announced by Mrs. Morgan: Credentials: Mrs. Lynn Harris and Mrs. Warren Riley. Timekeeper: Mrs. Charles Wilkins. Reading: Mrs. Walter Mizell and Mrs. Curry Bradburn. Resolutions: Mrs. Gordon Oates. Registration: Mrs. Ron Kaler. Convention Chairman: Mrs. Deno Pappas.

The House of Delegates approved the following Board Recommendations: 1. That the dues be increased. 2. That the proposed budget for 1980-81 be accepted. 3. A memorial donation of \$100 be sent to AMA-ERF in memory of Mr. Eugene Warren, attorney for the Arkansas Medical Society and Arkansas Medical Board.

Mrs. Frank E. Morgan gave a resume of her duties and experiences of the past year as President of the Arkansas Medical Society Auxiliary. She then presented a brass gavel in honor of Mrs. Mason G. Lawson, past state president and past president of the American Medical Association Auxiliary and National Honorary Member of the AMAA. Mrs. Morgan also presented AMSA Plaques to Mrs. Lawson and Mrs. Curtis Jones of Benton, State Honorary Members.

The following were elected to serve on the Nominating Committee for 1980-1981:

Mrs. Frank E. Morgan, Chairman —  
Pulaski County

Mrs. Paul Cornell — Pulaski County

Mrs. C. Lynn Harris — Southwest Area

Mrs. J. Larry Lawson — Greene-Clay County

Mrs. W. P. Phillips — Sebastian County

By common consent Mrs. Warren Boop was empowered to appoint delegates to the National Convention.

Garland County Auxiliary hosted the box luncheon and tour of the Mid-America Museum at noon on Monday, April 21. Mrs. James Gardner, President of Hot Springs, was the general hostess. Door prizes were awarded. The tables were beautifully appointed with orange and yellow cloths, which were later given to the Museum, and baskets of contrasting marigolds tied with calico ribbon.

Members of the Auxiliary joined Society members at a cocktail party hosted by the Arkansas Blue Cross-Blue Shield which was held in the Arlington Hotel on Monday evening, April 21.



## AUXILIARY OFFICERS ADDRESS HOUSE OF DELEGATES



Mrs. John F. Vaughan of Vancouver, Washington, president-elect of the American Medical Association Auxiliary, Mrs. Raymond M. Yow of Salisbury, Maryland, president of the Southern Medical Association Auxiliary, Mrs. Frank E. Morgan of North Little Rock, president of the Arkansas Medical Society Auxiliary, and Mrs. Warren Boop of Little Rock, president-elect of the Arkansas Medical Society Auxiliary, brought greetings from their organizations to the House of Delegates of the Arkansas Medical Society.



A joint Prayer Breakfast was held at 7:30 A.M. on Tuesday, April 22, for members of the Arkansas Medical Society and Auxiliary.

## SECOND GENERAL SESSION

The Second General Session of the Arkansas Medical Society met in the Venus Room of the Arlington Hotel on Tuesday, April 22, with Mrs. Frank E. Morgan, President, presiding. The invocation was given by Mrs. W. Payton Kolb. A quorum was declared present by Mrs. Kolb, Parliamentarian, after the roll call by Mrs. J. C. Callaway, Secretary. Mrs. Raymond M. Yow, President of Southern Medical Association Auxiliary, was the keynote speaker. Dr. John Giller, El Dorado and a candidate for Lieutenant Governor, was introduced. Reports of the county presidents were given with the regional vice presidents moderating. Mrs. Deno Pappas, convention chairman, reported a registration of ninety-two members.

Mrs. Walter Mizell, chairman of the nominating committee, presented the following slate of officers for the coming year:

President — Mrs. Warren Boop, Little Rock

President-Elect — Mrs. Raymond Peeples,  
Hot Springs

Secretary — Mrs. W. J. James, Pine Bluff

Treasurer — Mrs. W. Ray Jouett, Little Rock

Regional Vice-Districts:

Northeast — Mrs. Herbert Taylor,

West Memphis

Northwest — Mrs. McDonald Poe, Fort Smith

Southeast — Mrs. William S. Orr, Jr.,

Little Rock

Southwest — Mrs. A. E. Andrews, Texarkana

The officers were elected by acclamation as proposed by the nominating committee.

Mrs. Gordon Oates, Courtesy Resolutions Chairman, gave the report of the Courtesy Resolution Committee.

Dr. Frank E. Morgan, husband of the State President, was made an honorary auxilian.

The LeMirabelle Restaurant in Hot Springs was the site of the Tuesday luncheon. Mrs. Chalmers S. Pool, Little Rock, offered grace. Informal modeling during the luncheon was presented by Oaklawn Sportswear with members of the Auxiliary serving as models. Past Presidents of the Auxiliary were recognized. The following awards were presented: Membership, Mrs. Warren Boop, chairman; Doctors' Day, Mrs. Curry Bradburn, chairman; and AMA-ERF, Mrs. James Bethel, chairman. Pulaski County Auxiliary, Mrs. J. W. Downs, president, served as hostess for the luncheon.

Mrs. Paul Cornell installed the new officers for the coming year. An herbal theme was carried out both in the installation and table decorations. Mrs. Morgan presented Mrs. Boop with the gavel, plaque, and President's pin of the Auxiliary. Mrs. Boop then presented the Past President's pin, a gift of the Auxiliary and Dr. Morgan to Mrs. Morgan. Mrs. Boop then addressed the Auxiliary with her message. Mrs. Downs presented a wreath of herbs to Mrs. Boop, a gift of Pulaski County Medical Auxiliary.

Meeting adjourned.



# Advances in Psychosomatic Medicine\*\*

Thomas H. Holmes, M.D.\*

My presentation today, "Advances in Psychosomatic Medicine," is in some respects a review of my professional career. Let me begin by saying that one owes a debt to many people along the way. My interest in psychosomatic medicine began in the laboratory of Dr. Harold Wolff at Cornell and was catalyzed by people like Dr. Edward Weiss and Dr. O. Spurgeon English. Since I have been at the University of Washington it has been very gently but positively reinforced by Dr. Herbert Ripley. And one can't work alone in these things; I have collaborated with many people over the years, the most constant and supportive of whom have been my colleagues, Mrs. Marion Amundson and Dr. Minoru Masuda.

Placed in historical perspective, what we have been doing in my laboratory is addressing ourselves to the assertion of Alexander Pope almost 300 years ago that "The proper study of mankind is man."

The research I present today begins, as Pope suggested, with man and takes advantage of the doctor-patient relationship to study sick people at the bedside, in the laboratory, and in the community. The starting point is the clinic and the psychobiologic orientation of Adolf Meyer<sup>1</sup> of Johns Hopkins. Dr. Meyer was interested in the relationship of three open-ended disciplines — biology, psychology, and sociology — to the processes of health and disease in man. To schematize those relationships he created the "life chart," a device which organizes medical data as a dynamic biography. Information is provided by the patient and is arranged by year and the patient's corresponding age. The entries on the life chart describe life situations — experiences having to do with growth, development, maturation, and aging — as well as the patient's emotional responses to those situations. Certain life experiences we arbitrarily call disease are listed separately. In this approach to patients and their problems, "disease" applies to change in health status and includes a broad spectrum of medical, surgical, and psychiatric disorders. The life chart thus allows us to take into account not only the

occurrence of disease but also the setting in which it occurs.

The patient whose life chart I will first discuss is a female born in Holland, married, and without children.<sup>2</sup> She has a long history of headaches, head colds, and sinus disease as well as other diseases. She is tense, frustrated, and a review of her life documents the recurrence of episodes of bitter weeping, with feelings of helplessness associated with conflicts, doubts, and misgivings. It is in this setting that illness occurs. We now take patients like this into the laboratory to see what we can learn about the relationship between the patient's illness and the setting in which it occurs.

Observations are made of blood flow, secretions, swelling, and obstruction to breathing in the nasal mucous membranes before, during and after an interview; biopsies are also taken before the interview and during it. At the same time these observations are being made we begin the interview, asking questions about the subject's life situation: "How do you feel? What do you see as happening to you? What position does that put you in? What does it feel like inside?" When we ask these questions, we get responses like this: "I feel helpless. Unable to face the situation. I wish it would go away, leave me alone. I feel left out in the cold."

As the individual discusses feeling "left out in the cold," we observe hyperemia, hypersecretion, and swelling in the mucous membranes, and obstruction to breathing is reported. An increase in the secretion of eosinophils and polymorphonuclear leukocytes is documented. When we compare a biopsy taken when the mucous membranes are in a reasonably normal state to one taken at the height of the reaction during the interview, we see that discussion of things having to do with coping in real life situations produces edema of the nasal tissue and the infiltration of acute inflammation cells as well. Thus in the laboratory we have produced nasal disease by introducing a sensitive topic about boss or mother-in-law or financial difficulties or any number of other salient life situations.

One of the most common pain syndromes seen in clinical medicine is the backache syndrome, and probably the most common source of pain

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in chronic intractable pain syndromes is skeletal muscle.<sup>3</sup> In the laboratory we once again attempt to define the patients' psychological state as the discussion of life situations takes place. The backache patient's attitude toward the situation in which he finds himself is quite different from the weeping patient's: the backache patient says that when mother-in-law comes to visit, he wants to run away. He can't tolerate her and he can't fight back; all he can do is avoid the situation by running away. He feels this very strongly but can't take action: he is held motionless with his skeletal muscles mobilized to move.

Many laboratory experiments were performed in which backache was produced during discussions of sensitive situations with the individual. As the interview begins we see the genesis of muscle tension as recorded by electromyogram and, after a short latency, the report of backache. When we change to neutral topics, the muscle tension subsides and the pain goes away. We then re-introduce the sensitive topic; muscle tension returns and so does the pain. We are, in effect, demonstrating the nonbacterial equivalent of Koch's postulates, by manipulating the experimental situation by directing the interview toward and away from sensitive topics.

Blood flow is another parameter in the genesis of backache pain. During the course of skeletal muscle tension or contraction, the circulation of the blood is decreased in proportion to the strength of the contraction.<sup>4</sup> In strong contractions pain develops rapidly and the endurance of the sustained contraction is reduced. When the muscles relax, the blood flow is re-established with a rapid surge in volume and pain promptly disappears. The pain threshold is rapidly restored to normal, endurance comes back, and blood flow returns to normal.

In these skeletal muscle tension and blood flow experiments we can see, then, another biologically inappropriate pattern of responses evoked as an attempt to cope with a disturbing life situation. In this case the individual who wants to run away from the situation prepared for action: muscles get tense, blood flow is reduced, potassium is mobilized from the muscle cells, and pain occurs.

We turn now to one final example of our investigations into a clearer understanding of clinical pain syndromes.<sup>5</sup> Our subject is an individual who has had two illnesses coexisting simultane-

ously, and these are illnesses which involve widely varying pathophysiologic processes. This patient is a 55-year-old male who has the backache syndrome with pain, tenderness, and muscle spasm. He has had backache on and off for many years, and now is in the hospital with intractable abdominal pain. We give the subject a small amount of intravenous sodium amytal to make him relax, and soon all the muscle tension, pain, and tenderness are gone. At that time we discover a mass in the left upper quadrant. The patient now feels pain only when one manipulates the mass. Clearly there are two different pain mechanisms at work here.

The abdominal mass, a hypernephroma, initiates noxious afferent impulses, which travel into the spinal cord and elicit reflex muscle contractions. The mass also sends afferent impulses to the brain where the sensation of pain is registered. The subject reacts with anxiety and tension: he would like to run away from the situation but can't, and this reaction sends down more motor impulses to the anterior horn cell which stimulates the skeletal muscle to contract vigorously. This sustained contraction then gives rise to pain by the mechanisms we examined a moment ago. The pain from the sustained muscle contraction feeds back into the central nervous system and the result is chronic pain.

The sodium amytal allows us to distinguish the two pain mechanisms operating here. The drug has no direct effect on pain, muscle, or cancer tissue, but it does relieve the subject's tension. When the subject relaxes, most of the efferent outflow from the central nervous system to the skeletal muscles is reduced. As the skeletal muscles relax, blood flow is re-established and the pain from the muscle tension goes away. The subject still has the cancer, but to activate the pain-sensitive mechanisms associated with it one must displace or place traction on the cancer tissue. This manipulation then provides a demonstration of the other pain mechanisms. One may have, then, the coexistence of multiple diseases, some of which are functional. The skeletal muscle tension just examined is an example of functional pathophysiology.

We now turn to studies done in collaboration with Dr. Donald Dudley, et al.,<sup>6</sup> of people with diffuse obstructive pulmonary disease. These subjects frequently experienced shortness of breath, or dyspnea. One of the first things observed about

these subjects was that there was no predictable relationship between the respiratory physiologic variables and the occurrence of dyspnea. Obviously this did not make sense so we took our subjects back into the laboratory to look at their psychological state as well as their physiological state.

We found a pattern. Subjects were apt to feel short of breath on days when they felt "bad," and on the days when they felt "good," they did not complain of shortness of breath. We began to analyze more carefully the particular psychophysiological state of each subject on dyspneic days. We found that on some "bad" days they were feeling angry, anxious, or both, and action oriented. On other dyspneic days they felt depressed, apathetic, withdrawn, and non-action oriented. When we distinguish these mood states and analyze them separately, we get a beautiful correlation between respiratory variables and the mood state and dyspnea.

The physiological state associated with anger and anxiety, or action oriented behavior, is hyperventilation (increased ventilation and decreased alveolar carbon dioxide). Under these circumstances our subjects complained of dyspnea. The observations of dyspnea with depression or other non-action oriented behaviors show just the opposite state. When subjects felt depressed, action was the farthest thing from their intent. The physiological change associated with that attitude is hypoventilation (reduced ventilation and alveolar carbon dioxide).

Our next experiments<sup>7</sup> take us into another area of psychosomatic medicine. Here we study the relationship of two or more noxious agents acting simultaneously on the host and observe the effects of the two. Our subject in this experiment has hay fever. Here we are holding the constitutional dimension of the natural history of the disease a constant. The two noxious agents we observe at work are pollen and the home situation. After making controlled observations of the nasal mucous membranes in both left and right nasal chambers when the subject is calm, secure, and relaxed, we introduce the subject into the pollen room. The response is mild hay fever. About twenty minutes later we introduce the second noxious agent, the home situation which has engendered much conflict. The subject feels tense, helpless, left out in the cold, unable to do anything about it. The reaction of the nasal mu-

cous membranes to this added insult is one of enhanced hyperfunction and hay fever symptoms. After half an hour of discussing the sensitive domestic situation with the subject, we redirect the interview and give the subject reassurance, support, and understanding. The effects of psychotherapy become evident. Although the pollen is still present in the laboratory, the subject's acute reaction subsides.

Let's look at the neural mechanisms involved in the nasal hyperfunction we have just observed. In another experiment with a hay fever subject,<sup>7</sup> after making controlled observations of nasal mucous membranes in both nasal chambers, we introduce into the left stellate ganglion a solution of 2% procaine. The left stellate ganglion is part of the sympathetic nerve chain and the procaine blocks the flow of sympathetic impulses from the spinal cord up to the left side of the head including the tissues of the left nasal chamber. This interference in the nerve supply to the head produces a Horner's syndrome: along with the changes in the eye and the face, the mucous membranes in the left nasal chamber get red, wet, and swollen. We have now a control side, the right nasal chamber, which still receives sympathetic nerve impulses, and an experimental side, the left nasal chamber which receives only parasympathetic nerve supply. The hyperfunction in the left nasal mucous membrane is now the result of parasympathetic impulses from the brain to the nose. This is the mechanism by which environmental stimuli such as mother-in-law evoke nasal mucous membrane reactions.

When we add pollen to both left and right nasal cavities, we observe two distinct reactions. In the left nasal chamber we see the effect of adding the antigen, pollen, to the neuromechanism of mother-in-law: adding the noxious agent pollen to the already hyperfunctioning mucous membranes produces a typical hay fever reaction in the left side of the nose. The insult of pollen also produces a reaction in the right nasal cavity, but it is transient and of low magnitude — not enough to produce symptoms. The dramatically intensified hyperfunction associated with two noxious agents like pollen and the life situation shows that they exert a summative or additive effect. We are dealing with very solid, readily demonstrable neuromechanisms. What the brain can control, the environmental situation with its afferent input to the brain can also control.



Pollen alone was not sufficient to evoke symptoms in our hay fever subject, but the combined assault of pollen and life situation was. These different reactions in the same hay fever subject lead us to ask questions about resistance to attack by noxious agents. We return now to the clinic to studies of the natural history of tuberculosis. We will hold the noxious stimulus constant—here it is the pulmonary tuberculosis germ—while varying mood and behavior. We choose 17-ketosteroid excretion rate as our index of resistance to inflammation and of anabolic metabolic state.

Studies of the hospital course of 206 tuberculosis patients<sup>8</sup> revealed associations between the biological, psychological, and disease states. The 17-ketosteroid levels were associated with the state of the disease. In general, with minimal tuberculosis the *average* steroid excretion is relatively high. With moderate tuberculosis the average steroid level is a little lower, and with far advanced tuberculosis, lower still. We also noticed that the *daily* steroid excretion levels within all three groups range from very low to very high.

When we correlated the progress of the disease, the level of the index of resistance to infection or inflammation, and the psychological state expressed in mood and behavior, some interesting relationships emerged.<sup>8</sup> Those patients with the far advanced, acute, exudative tuberculosis were depressed, overwhelmed, older males with considerably reduced steroid excretion. At the other end of the spectrum were those with minimal tuberculosis, who have steroids above normal (corrected for age and sex). They are tense, anxious, conflict-ridden people and predominantly younger females.

Making an assumption that the tuberculous germ and the mood and behavior associated with the disease state are constant, we now take into account the social situation.<sup>9, 10</sup> We introduce our subject into the community at large to study the relationship of life style to the natural history of tuberculosis. The community we studied was the city of Seattle, and we used area of residence as determined by census tract as our index of life style. We divided the city into four areas: I, a "Skid Row" residential area (or city center or "ghetto"); II, a "blue collar" residential area; III, a "white collar" residential area; and IV, a "better socioeconomic" residential area. We then

correlated tuberculosis morbidity rates with residential areas, our index of life style.<sup>11</sup>

Whites who live in Area I, the city center, have a high morbidity rate, but it progressively decreases in Areas II, III, and IV. For non-whites, the morbidity rate is even higher than for whites in the city center, is cut in half in the blue collar (II) and white collar (III) residential areas, but is one-third higher in Area IV than in Area I. There are also clear differences between non-white females and non-white males. The morbidity rate for the non-white females is exactly the same in Area IV as in Area I, while non-white males have almost twice the risk of getting tuberculosis when they live in Area IV, the better socioeconomic residential area, than in Area I, the city center.

What we are seeing for the whites in Area I is the role of their marginal social status, and for the non-whites in Area IV, the culture conflict engendered by the close residential juxtaposition of a minority and a majority population. Such conflicts in life style evoke depression, withdrawal, and feelings of being overwhelmed, thereby reducing resistance to infection or inflammation, and making it possible for the germ, if present, to produce the tissue reaction of tuberculosis.

We turn now to an entirely different area of psychosomatic medicine: the study of factors that influence or modify the course of disease once the disease gets started. This emphasis on treatment was a major concern of both Dr. Weiss and Dr. English. Here I draw on some of the work done by Dr. Herbert S. Ripley, another pioneer in this field, to emphasize some of the techniques used in the management of patients under treatment in a medical clinic.<sup>12</sup> The chief procedures he listed are as follows:

- Reassurance and emotional support
- Free expression of conflicts and feelings
- Advice regarding attitudes, habits and activities
- Explanation of psychophysiologic processes
- Symptomatic drug therapy
- Intravenous use of sodium amytal
- Ruling out neoplastic and infectious disease
- Dealing with other members of the family
- Development of insight
- Analysis of emotional development
- Attempts to modify situation
- Dream analysis
- Help from Social Service Department

We have here a representative list of therapeutic devices that the doctor has at his disposal to manage patients with illnesses of all sorts — medical, surgical, and psychiatric. We want to ask: What can we expect to get from applying these doctor-patient relationship techniques in the care of sick people?

We can go back to our study of tuberculosis patients for one answer. The patients at Firland Sanatorium were managed by physicians who used not only appropriate medication including antibiotic drugs but also a very effective doctor-patient relationship. In general, those who got well quickly were the patients whose mood, behavior, and biological resistance were changing toward normal. Those whose disease stayed the same or got worse, were patients whose mood and behavior were either anxious or depressed, and whose steroid levels were correspondingly elevated or lowered. Those who died were usually depressed with reduced levels of 17-ketosteroids. When we compare the number who improved with the number who did not, we see that by using his skill in interpersonal relationships, and by transmitting the special things that doctors transmit, the physician can effect a dramatic modification in the natural history of disease: 80% are improved to a greater or lesser degree. This figure of 80% ( $\pm 10\%$ ) improvement seems to be the general result reported for the treatment outcome of most chronic diseases. This is an impressive achievement for modern medicine.

Let's take a different approach now. Instead of asking what the doctor brings to the treatment situation we ask what the patient brings to the equation that may influence the course of disease. We did a prospective quantitative study<sup>13</sup> of psychosocial assets in a representative sample of pulmonary tuberculosis patients, and we found that those who got better were the people who had many psychosocial assets: strong family ties, steady employment, adequate income and job satisfaction, regular recreation (clubs, hobbies), frequent social participation, flexibility and reliability, realistic goals, and adequate or good performance. Those patients who did not get better had no family, had transient employment and income from Welfare, no job satisfaction, substandard residence, no outside interests, no goals or responsibilities, and were socially isolated and deviant.

Another study of the interrelationship of the

patient's assets, the drug, and the doctor-patient relationship was done in the laboratory of Dr. Paul Van Arsdel, Jr. (Professor of Medicine, Division of Allergy) in conjunction with Drs. Dudley and Gilberto de Araujo.<sup>14</sup> We compared the therapeutic steroid dosage for asthma in two groups of patients who are roughly comparable in age and duration of asthma. Using the Berle Index, an instrument which measures the psychosocial assets we have just discussed in the tuberculosis study, the asthmatic patients were divided into "high" and "low" Berle Index scores. After one year of treatment the group with many psychosocial assets required a very low steroid dosage for the management of their asthma, whereas those with few psychosocial assets required three times the amount of steroids to control their symptoms. When we combine the factors in our equation, the net result is that with good techniques, good drugs, and good patients — patients with many psychosocial assets — the outcome is favorable.

At this point in our study of man, we are ready to ask another kind of question. Is it possible to make predictions about the time of onset of illness? First we return to the study of a patient with tuberculosis, noting the time of occurrence of job changes, residential changes, financial changes, health changes, and jail terms for 12 years prior to admission to the hospital with tuberculosis. As time of admission to the hospital is approached there is a mounting frequency of these social events. In the two-year period prior to admission to the hospital there is a "life crisis" or a veritable crescendo of life change events which is the setting for the onset of tuberculosis.

From individual patient studies we moved to studies of many samples of tuberculous patients. The accumulation of life events in the setting of hospitalization was a striking and consistent finding. We conducted control experiments in which we matched patients who got tuberculosis while working in the hospital with fellow hospital employees who had equal probability of exposure to the tuberculosis germ but who did not get the disease.<sup>15</sup> Time of onset was determined from routine quarterly chest x-rays done on all employees in the hospital. We then gathered data about the life changes for each group in the previous ten years. We found in the two years prior to onset of tuberculosis that a highly significant increase in the number of life changes was ex-



perienced by those who got the disease as compared to those who did not. We used a similar research design to study heart disease, hernia, skin disease, and pregnancy, and found similar relationships.<sup>16</sup> In summary, it appeared from these retrospective studies that one of the important factors determining the time of onset of disease or health change is the accumulation of many life changes.

Here we began our systematic study in earnest. We analyzed some 5,000 case histories, going through the life charts and picking out the life change events present in patients' lives at time of illness onset. We compiled a list of 43 life events empirically observed to occur just prior to the time of onset of disease. Marriage, trouble with the boss, jail term, death of spouse, change in sleeping habits, retirement, death in the family, vacation — this selection gives you an idea of the range of events which our list of 43 items covered.<sup>17</sup> To generate a definition of the salience of these life events we used a technique for the quantification of man's experience derived from that branch of psychology called psychophysics.<sup>18</sup>

TABLE 1.

THE SOCIAL READJUSTMENT RATING SCALE\*

<i>Life Event</i>	<i>Mean Value</i>
1. Death of spouse	100
2. Divorce	73
3. Marital separation from mate	65
4. Detention in jail or other institution	63
5. Death of a close family member	63
6. Major personal injury or illness	53
7. Marriage	50
8. Being fired at work	47
9. Marital reconciliation with mate	45
10. Retirement from work	45
11. Major change in the health or behavior of a family member	44
12. Pregnancy	40
13. Sexual difficulties	39
14. Gaining a new family member (e.g., through birth, adoption, oldster moving in, etc.)	39
15. Major business readjustment (e.g., merger, reorganization, bankruptcy, etc.)	39
16. Major change in financial state (e.g., a lot worse off or a lot better off than usual)	38
17. Death of a close friend	37
18. Changing to a different line of work	36
19. Major change in the number of arguments with spouse (e.g., either a lot more or a lot less than usual regarding child-rearing, personal habits, etc.)	35
20. Taking on a mortgage greater than \$10,000 (e.g., purchasing a home, business, etc.)	31
21. Foreclosure on a mortgage or loan	30

22. Major change in responsibilities at work (e.g., promotion, demotion, lateral transfer)	29
23. Son or daughter leaving home (e.g., marriage, attending college, etc.)	29
24. In-law troubles	29
25. Outstanding personal achievement	28
26. Wife beginning or ceasing work outside the home	26
27. Beginning or ceasing formal schooling	26
28. Major change in living conditions (e.g., building a new home, remodeling, deterioration of home or neighborhood)	25
29. Revision of personal habits (dress, manners, associations, etc.)	24
30. Troubles with the boss	23
31. Major change in working hours or conditions	20
32. Change in residence	20
33. Changing to a new school	20
34. Major change in usual type and/or amount of recreation	19
35. Major change in church activities (e.g., a lot more or a lot less than usual)	19
36. Major change in social activities (e.g., clubs, dancing, movies, visiting, etc.)	18
37. Taking on a mortgage or loan less than \$10,000 (e.g., purchasing a car, TV, freezer, etc.)	17
38. Major change in sleeping habits (a lot more or a lot less sleep, or change in part of day when asleep)	16
39. Major change in number of family get-togethers (e.g., a lot more or a lot less than usual)	15
40. Major change in eating habits (a lot more or a lot less food intake, or very different meal hours or surroundings)	15
41. Vacation	13
42. Christmas	12
43. Minor violations of the law (e.g., traffic tickets, jaywalking, disturbing the peace, etc.)	11
*(17)	

Table 1 reproduces the result of our research, the Social Readjustment Rating Scale (SRRS). Let me remind you that what we are studying here is the *amount of change* required by these 43 life events. The relative importance of each item is determined *not* by the item's desirability, *nor* by the emotions associated with the item, *nor* by the meaning of the item for the individual. It is the amount of change that we are studying and the relationship of the amount of change to the onset of illness.

The life events items contained in the SRRS had previously been used in our laboratory to construct a Schedule of Recent Experience (SRE).<sup>15,16</sup> This self-administered questionnaire allows the respondent to document, for specified time periods, the occurrence of the various life events. With the development of the scale of magnitudes for the life event items (SRRS) we could now use these values to score the SRE (re-

ferred to as Life Change Units (LCU)) to provide a unique method for a quantitative definition of a life crisis.

Using the SRE we gathered retrospective life change data for a ten-year period on subjects.<sup>19</sup> We plotted the life change score for each time period and superimposed on this profile the occurrence of illnesses. A variety of illnesses were noted to coincide with high life change magnitude.

This retrospective study was one of many. In later studies of populations using the same methods for quantifying life change, we did both retrospective and prospective studies of the relation between life change magnitude and the occurrence of illness. We found in both studies that in the two years at risk 30% of the people with low life change got an illness. About 50% of the people who were in the intermediate range of life change got an illness, and about 80% of those in the high range of life change got an illness.<sup>19,20</sup>

In one prospective study we used as an experimental group 100 college athletes who filled out a special SRE, called Athletic Schedule of Recent Experience, before the start of the football season. We found that of those players who were in the high risk group (in the 300 range of LCU) at the start of the football season, 70% got an injury during the course of the three-month season.<sup>21</sup>

In another prospective study of Navy personnel, Dr. Richard Rahe,<sup>22</sup> who worked with me in the early stages of development of this life change research, found a linear relationship between mean illness rate and the magnitude of life change. Dr. John Petrich<sup>23</sup> has summarized the findings of a variety of studies which again indicate the positive relationship of life change to onset of a number of psychiatric, medical, and surgical diseases.

Investigations of the relationship of magnitude of life change and seriousness of illness revealed a positive correlation for chronic disease of 0.65.<sup>24</sup> This study tells us that if a person has had more than 300 life change units in the last year and gets sick in the near future, the probability is that he or she will get diabetes, schizophrenia, heart attack, or cancer rather than headache, mononucleosis, anxiety reaction, or asthma. On the other hand, if in the past year a person has had less than 100 life change units and gets sick

in the near future, he or she will be more apt to get one of the less serious diseases.

Knowing what we now know about prediction of illness onset, the next question to ask is, what can we do about prevention? We conducted a study of the effects of primary prevention on a national television audience using an educational approach, telling people what the experimental data are and what the probabilities are in the relationship of life change and illness onset. Comparing morbidity data before and after the television program, we found that 15% more people stayed well in the year following the intervention than in the year preceding intervention.

When people write to me today and ask for information about life change and illness onset, I often send along the list of preventive measures which we sent to the participants of the preventive study:

1. Become familiar with the life events and the amount of change they require.
2. Put the Scale where you and the family can see it easily several times a day.
3. With practice you can recognize when a life event happens.
4. Think about the meaning of the event for you and try to identify some of the feelings you experience.
5. Think about the different ways you might best adjust to the event.
6. Take your time in arriving at decisions.
7. Anticipate life changes and plan for them well in advance if possible.
8. Pace yourself. It can be done even if you are in a hurry.
9. Look at the accomplishment of a task as a part of daily living and avoid looking at such an achievement as a "stopping point" or a time for letting down.
10. *Remember*, the more change you have, the more likely you are to get sick. Of those people with over 300 Life Change Units for the past year, almost 80% get sick in the near future; with 150 to 299 Life Change Units, about 50% get sick in the near future; and with less than 150 Life Change Units, only about 30% get sick in the near future.

So, the higher your Life Change Score, the harder you should work to stay well.

My message is direct. There are a lot of things that are worse than illness. One of them may be



not taking a promotion, or not letting your mother-in-law come to visit. But at least recognize the risk you are under and be willing to pay the price.

Let me close with a phrase which formulates what I have been saying about the natural history of disease: Disease is a byproduct or epiphenomenon of man's goals and the techniques he uses in achieving his aspirations.

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# Hyperalimentation\*\*

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Hyperalimentation had its inception with Graves in 1835 who wished his epitaph to be "He feeds fever." In the modern sense, hypertonic alimentation was refined and popularized by Dudrick, Meng and others.<sup>4</sup> In essence this modality is applicable to patients who cannot, should not or will not eat. The two modes of administration are enteral or intravenous. The intravenous approach is particularly useful in situations dictating complete bowel rest and in the case of the comatose patient. Intravenous caloric supplementation is a sensible adjunctive measure in settings where the patient simply cannot eat enough.

To comprehend the rationale for hyperalimentation, one must first address the subject of "starvation" to see what biochemical processes ensue.

In fasting man glycogen stores are rapidly depleted (24-48 hours)<sup>15</sup> and the body then turns to protein catabolism and lipolysis for its energy needs. With the onset of gluconeogenesis, urinary nitrogen excretion may increase from a baseline of 6 grams to 12-15 grams daily.<sup>1</sup> The brain is stubborn as it demands glucose as its energy substrate while other organ systems are "adapting" to utilization of free fatty acids or their partially oxidized forms, ketone bodies.<sup>16</sup> After two or three weeks, however, there is uniform acceptance of this energy source and, at that point, a decrement in urinary nitrogen is appreciated as some protein sparing occurs.

Fat usually constitutes 17% of a male's body weight and these stores should theoretically suffice for a two-month fast.<sup>58</sup> When fat stores are exhausted, tremendous attrition is again directed at muscle tissue which, by this time, is meager. Death is expected when 30% of the body weight has been lost.<sup>11</sup>

As one might expect, starvation induces a loss of lean body mass, body fat and, of course, body weight. There is a relative increase in extracellular mass.

Dionigi has further characterized immunologic consequences of starvation. These include depressed IgG and C<sub>3</sub>; impaired neutrophil chemotaxis with preserved phagocytic abilities as reflected by the NBT test; severe lymphopenia, im-

paired response to sheep rbc's and to PHA stimulation.<sup>9</sup> The latter phenomenon assesses T-cell function. Depressed T-cell function confers a propensity for viral, mycobacterial, fungal, gram-negative bacterial, protozoan and parasitic infections. Low C<sub>3</sub> levels could also predispose to gram-negative infections. All of these parameters could be rectified with hyperalimentation except, probably the most important, PHA responsivity.

Realizing the ravages of starvation, then, one must have some general means of identifying the starving patient. Some liberal indicators of protein-calorie malnutrition include: albumin < 3.5 g/dl; negative nitrogen balance; a decreased TIBC paralleling the depression of albumin; loss of more than 15% of body weight; and inadequate oral intake for two weeks.<sup>5</sup> The creatine/height index may prove helpful.<sup>81</sup> Certainly, specific entities come to mind and these will be mentioned later. It should be said that intravenous hyperalimentation should not be initiated frivolously as it requires fastidious care and utmost vigilance.

## NUTRIENT SOURCES:

Once committed, one must select an appropriate nutrient solution. To better understand the rationale for combination solutions, it is enlightening to evaluate the salutary effects of the various constituents.

Hypertonic dextrose has been the mainstay of intravenous caloric delivery. An important effect of glucose administration is nitrogen sparing as evidenced by a reduction in the blood urea nitrogen and urinary losses. With protein sparing or a decrease in gluconeogenesis, there is a rise in serum alanine, the amino acid most readily convertible to glucose.<sup>12</sup> Earlier data suggested that better nitrogen conversion could not be effected with carbohydrate calories in excess of 700. However, a recent study showed high density dextrose solutions could improve nitrogen balance.<sup>16</sup>

During starvation, basal insulin levels drop below usual "physiologic" levels to an average of 15  $\mu$ U/ml. This allows lipolysis and the elaboration of FFA's. With administration of hypertonic dextrose, insulin levels necessarily rise and glucagon levels are diminished. The rise in insulin is advantageous as it is an anabolic hormone with the following effects: Promotes nitrogen and K<sup>+</sup>

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uptake by cells for protein synthesis; fosters cell growth and mitoses; and decreases production of urea. Higher basal insulin levels do not prevent but impair lipolysis and, on the negative side, deprive the organism of a potent energy substrate, FFA's and ketone bodies. Furthermore, insulin promotes triglyceride synthesis. If one considers that fat stores are 10% linoleic acid but mobilization is largely inhibited and there is no exogenous fat administration, it is easy to understand how essential fatty acid deficiency can occur.

"Protein-sparing therapy" or peripheral amino acid (alone) administration is somewhat of a controversial issue as the data is conflicting. However, the consensus would probably be that amino acid infusions do not effect a positive or zero nitrogen balance. A recent report showed that the average urinary nitrogen loss per day (after "adaptation") in starvation was 6 grams. With amino acids alone there was a urinary nitrogen excretion equal to that administered plus 3 grams of endogenous nitrogen.<sup>16</sup> Thus, nitrogen balance was improved. With this therapy, there is an elevation in the BUN reflecting a greater N load available for conversion to urea. Basal blood glucose and insulin levels drop similar to that expected in starvation. As expected there is also a rise in glucagon, FFA's and ketones. One short-term study showed that patients on fat-free, amino acid alimentation failed to develop biochemical indices of EFAD while one might expect such a development in the case of fat-free, hypertonic dextrose infusions.<sup>61</sup>

Administration of a fat emulsion alone, such as Intralipid, has similar effects to that of amino acid infusions; namely, a reduction in basal insulin levels and an elevation in FFA's. The amelioration in nitrogen losses is roughly equivalent to that effected by amino acid therapy. However, this protein-sparing quality of Intralipid infusions has been ascribed to glycerol, as glycerin is added for isotonicity. Generally, nitrogen conservation is potentiated by high insulin/glucagon ratios and increased caloric delivery. Fat emulsions are an exception to this rule.<sup>16</sup>

It should be clear that each of these nutrient solutions has something unique to offer and should be used concurrently. Essential and non-essential amino acids can be provided for protein synthesis while the energy for such processes can be supplied by the oxidation of glucose. Further caloric supplementation can be achieved with

Intralipid as well as the prevention of essential fatty acid deficiency (EFAD).

#### NUTRIENT REQUIREMENTS:

Specific nutrient requirements must be borne in mind if one is to formulate an appropriate total parenteral nutrition (TPN) solution. Without exceptional physical activity or disease states, 32-35 Kcal/kg/24 hrs is considered adequate to maintain body weight.<sup>5,16</sup> However, one study showed that 46 Kcal/kg/24 hrs was required to effect a zero or positive nitrogen balance in patients with significant disease states.<sup>8</sup> Caloric requirements may supercede this level if one is attempting to replete fat and protein stores; and in hypermetabolic situations such as sepsis and trauma. Basal nitrogen requirements have been proposed as 6-9 gm/24 hrs as urinary loss during starvation averages 6 gm/day (after adaptation) and there is an obligatory 2-3 gm extra-urinary loss of N. Furthermore, 1.4-1.7 gm protein or amino acids/kg has been advocated.<sup>5</sup> Although one investigator has demonstrated maintenance of nitrogen balance with 1.1 gm/kg/24 hrs,<sup>66</sup> less than 1 gm/kg is unequivocally associated with negative N balance despite "adequate" non-protein calories.<sup>15</sup> Customarily, patients requiring TPN should be given 10-15 gm N daily. Optimal utilization of infused amino acids is dependent on ample non-protein caloric supplementation. An accepted ratio is 150-200 cal/gm of Nitrogen. Some benefit (in terms of nitrogen balance) may be appreciated with higher ratios and the addition of insulin. Of course, caloric expenditure is dependent on the basal metabolic rate (BMR) and this averages 30-64 Kcal/m<sup>2</sup>/hr.<sup>8</sup> Increasing age and fever (8%/1°F.) affect this parameter by accelerating the BMR. Caloric delivery could in theory and practice be tailored to this measurement.

Absolute fat requirements are important primarily with respect to adequate delivery of essential fatty acids as man cannot synthesize them and is dependent on exogenous administration. 7.5 gm of linoleic acid/day or approximately 4% of total calories has been recommended. However, some patients subjected to long-term hyperalimentation may not have normal biochemical patterns even when 7-10% of calories are given as essential fatty acid.

The expected benefits of TPN would primarily include creation of positive nitrogen balance.

Additionally, one would expect weight gain; and this averages 0.4 lb./day. Weight gains are probably one-third lean body mass and the remainder fat and water gains.<sup>13</sup> The respiratory quotient should also increase greater than one ( $RQ > 1$ ) as more  $CO_2$  is liberated and excreted as a result of accelerated glucose oxidation. This finding also signifies fat synthesis and less utilization of FFA's as an energy source.<sup>8</sup> Actually, a respiratory quotient value greater than one implies adequate caloric supplementation.

#### INDICATIONS:

With this background in mind, we shall consider specific entities which warrant or can be positively affected by intravenous or enteral alimentation. Starvation as a primary entity or secondary to some disease state is an indication. Food allergy such as eosinophilic gastroenteritis is a theoretical one. A common application is in the traumatized or postoperative state. Extensively burned patients are suitable candidates in view of exudative protein losses although they are subject to a high incidence of "catheter-related" sepsis if the administration line must transgress an affected area of skin. Enteral or intravenous feedings may prove beneficial in the case of psychogenic eating disorders such as anorexia nervosa, hyperemesis gravidarum or pernicious vomiting.<sup>28</sup> Intravenous alimentation would seem reasonable in the patient with pancreatitis in view of emesis and ileus, but a recent study failed to show any appreciable effect on the expected mortality.<sup>25</sup> In fact, a high rate of "catheter sepsis" was noted in the first five days of the illness. This modality is particularly useful in patients with inflammatory bowel disease (IBD), although CUC patients respond less favorably than those with Crohn's. TPN has proven applicable here in view of significant exudative enteric losses, reduction of absorptive surface due to inflammation, and a need for complete bowel rest. Another role for TPN as primary therapy is in the case of enterocutaneous fistulae (a frequent occurrence in Crohn's) which may have occurred as a result of neoplasm, IBD, or neoplasia. Patients with short gut syndrome due to extensive enterectomy (e.g., Crohn's, small bowel infarction) are candidates for life-long parenteral alimentation as oral intake will not suffice when less than 60 cm of small bowel remain in addition to the duodenum. Victims of esophageal

carcinoma are typically nutritionally deprived and the plight of unresectable patients may be measurably improved with implantation of a permanent feeding tube and enteral alimentation.<sup>26</sup> Furthermore, operated patients may have their postoperative course simplified with TPN.<sup>27</sup> The overall benefit seems small, however, as 90% of these patients are dead within one year. TPN may be a beneficial adjunctive measure in the therapy of patients afflicted with cancer because of anorexia accompanying the primary illness or due to chemotherapeutic agents. Also, neoplasia depresses albumin synthesis. Furthermore, with protein-calorie deprivation and resultant immunodepression the patients fall especial prey to opportunistic infections. A word of caution must be injected in that experimental studies have documented accelerated tumor growth with forced feedings of affected animals and clinical observations seem to substantiate this impression.<sup>30</sup> The rationale for TPN use in renal failure is the provision of essential amino acids so endogenous nitrogen can be utilized and protein conserved. A concentrated solution, to limit fluid intake, is available (Nephramine — McGaw). Increased survival rates have been demonstrated in patients with acute renal failure treated with TPN. Sepsis is peculiarly suited for hyperalimentation in view of induction of a hypermetabolic state and potential gains in the area of immune defense mechanisms. Hepatic failure is presently an exciting area of investigation. Here a paradox exists in that patients exhibit poor nutrition and a negative nitrogen balance and yet are protein intolerant. CSF and serum aminograms have disclosed elevated levels of aromatic amino acids (AAA) and depressed branched-chain amino acids (BCAA) in cirrhosis and hepatic coma.<sup>31</sup> Impaired synthesis of neurotransmitters and interference with neurotransmission is effected by a CNS excess of "false transmitters" (octopamine and phenylethanolamine) propagated by tryptophan and phenylalanine. The level of free tryptophan/BCAA correlates best with the development and severity of hepatic encephalopathy.<sup>32</sup> Solutions rich in BCAA or  $\alpha$ -keto analogues of BCAA have proven efficacious in this clinical situation.<sup>33</sup> A rare case of spontaneous perforation of the esophagus may not require or permit surgery and thus may prove amenable to this mode of therapy. The adult respiratory distress syndrome is a unique clinical situation where prolonged me-



chanical ventilation may preclude good nutrition. However, intravenous alimentation must be undertaken cautiously in these patients with critical fluid balances. Other indications might include coma, dementias, and cardiac cachexia. The benefit of this modality as an adjunctive or preparatory measure in many forms of surgery is obvious.

### COMPLICATIONS:

As well as the virtues of a particular therapy and its indications, one must be versed in its liabilities. The potential adverse effects of intravenous hyperalimentation therapy are multitudinous. Most of the ill-effects are related to the infusion catheter and the hypertonicity of TPN solutions. Pneumothorax as a technical mishap occurs in approximately 3% of patients.<sup>3</sup> Other complications include subclavian vein thrombosis, suppurative thrombophlebitis; pulmonary and "paradoxic" cerebral thromboembolization, air embolism; hydrothorax, irritative endocarditis or atrial perforation with resultant pericardial effusion and tamponade.<sup>34, 36, 38, 39, 85</sup> Catheter sepsis is defined as positive blood cultures which clear with catheter removal, without antibacterial therapy, and the absence of another identifiable focus of infection. The incidence of such a phenomenon averages 7%.

Significant hyperglycemia ( $BS > 300 \text{ mg\%}$ ) or hypoglycemia ( $BS < 60 \text{ mg\%}$ ) occur in 15 and 9% of cases, respectively.<sup>5</sup> Insulin antagonism is the rule in certain disease states and frequent urinary and blood glucose determinations must be made initially to ensure adequate glucose tolerance. A spuriously negative or fairly unremarkable urinary glucose level may result in the presence of a high renal threshold. Thus, urinary studies must be supplemented periodically with blood glucose determinations. A not infrequent consequence of uncontrolled hyperglycemia in this setting is the hyperosmolar, non-ketotic state as a result of osmotic diuresis and dehydration. Most patients accommodate high-density glucose infusions well and exogenous insulin administration should be considered only if blood sugars consistently exceed  $200 \text{ mg\%}$ .

The incidence of hypokalemia and hypophosphatemia is variably reported, but the morbidity from such a development may be considerable. The serum  $K^+$  poorly reflects total body potassium stores as it is the major intracellular cation. Phosphate is the major intracellular anion. An

intracellular flux of both of these ions is created with carbohydrate loads or insulin administration. Also, both may be spuriously low in serum in the face of alkalosis. In fact, a nomogram exists to assess  $K^+$  balance at various levels of arterial pH. Furthermore, glycosuria, ECF expansion, and acidotic states (urinary acidification) evoke considerable phosphaturia.<sup>36</sup> Conversely, metabolic acidosis may ensue if phosphate excretion is severely curtailed (due to depletion), impairing the development of "titratable acidity."<sup>44</sup> The potential adverse effects of hypokalemia are commonplace. Like hypokalemia, the hypophosphatemic state can also precipitate muscle weakness or even paralysis. Rhabdomyolysis occurs and appears to be potentiated by hypokalemia. ATP and ADP deficiencies may foster pherocyte development and hemolysis, and thrombasthenia, respectively. Lower levels of 2, 3 DPG tend to increase oxyhemoglobin affinity and, theoretically, could critically impair tissue oxygenation. Most of these phenomena are observed when the serum  $PO_4$  is less than  $2 \text{ mg/dl}$ . Finally, at levels less than  $1 \text{ mg/dl}$ , chemotactic and phagocytic properties of leukocytes are altered. Mental torpor has also been described.

Hypomagnesemia is particularly common in the alcoholic patient, in diuretic therapy, inflammatory bowel disease, and patients on protracted IV fluids with poor oral intake. Serum magnesium levels do accurately reflect total body stores. Hypomagnesemia may be suggested by refractory hypocalcemia and hypokalemia or may make its debut with recurrent ventricular tachycardia. With lowered  $Mg^{++}$  levels at neuromuscular junctions there is increased liberation of acetylcholine with resultant neuromuscular irritability. This may be clinically manifest as tremors, tics, chorea or convulsions. Conversely, ileus may exist, as well as dysphagia secondary to amotility of the esophagus. Vertical nystagmus, diplopia, confusion, delirium and frank psychosis have been reported. Fasciculations may also occur and mimic amyotrophic lateral sclerosis.

Hyperchloremic acidosis may occur as there is a relative excess of cationic amino acids which are precipitated with or balanced with chloride ions. Acetate administration can help negate an excess of unbalanced  $Cl^-$  ions. Hyperammonemia has been ascribed to low arginine levels in infusates and this is important in that arginine deficiency may act as the rate-limiting factor in urea syn-

thesis.<sup>13,14</sup> Furthermore, ornithine and citrulline are not contained in Freamine II.

Megaloblastic anemia secondary to folate deficiency may occur during hyperalimentation; especially in patients with a history of heavy ethanol abuse and poor nutrition. Normally, one would expect preserved folate levels for an average of nineteen weeks in subjects given a folate-free diet. However, megaloblastic bone marrow changes and macrocytic anemia may occur within five weeks<sup>41</sup> of institution of TPN, or even earlier.<sup>40</sup> Clinically, one may see an elevated bilirubin and LDH reflecting ineffective erythropoiesis. Anemia may be presaged by thrombocytopenia or leukopenia. In fact, low platelet count and a negative evaluation for DIC should prompt consideration of folate deficiency.

Copper is a component of several enzyme systems and, in particular, participates in mitochondrial energy production.<sup>53</sup> Cu deficiency has been indicted in cases of normochromic normocytic anemia and leukopenia. There has been no proof of hemolysis, and bone marrow study has disclosed apparent maturation arrest. The role of copper in hematopoiesis is unclear. Since Cu is excreted primarily in bile, disease processes which interrupt the enterohepatic "circulation" could foster inordinate copper losses and deficiency. Normally, average consumption of elemental Cu is 2-5 mg/day. Intravenous administration of 2 mg/day appears adequate.<sup>55</sup> The need for Cu supplementation with liquid protein diets has been emphasized.<sup>84</sup>

With more protracted intravenous alimentation, trace-metal deficiency syndromes have been unmasked. Copper deficiency has been mentioned. Zinc deficiency states have also been recognized. Zn is essential in DNA and RNA synthesis and, therefore, important in epithelial regeneration. Zn depletion is more likely to occur in patients with inflammatory bowel disorders, diarrhea or malabsorptive states; and cirrhotics with inordinate urinary losses. In one study the mean time of onset was 65 days after initiation of TPN therapy.<sup>48</sup> The constellation of findings included an eczemoid or asteatotic dermatopathy, particularly involving the scalp, nasolabial folds, oral mucosa, crural and acral parts. Further observations involved alopecia, anorexia, diarrhea, depression, retarded healing, olfactory and gustatory dysfunction, abdominal pain and leukocyte dysfunction.<sup>88</sup> The latter was characterized as

both a reduction in phagocytic and bacteriocidal properties. ZnSO<sub>4</sub> in oral doses of 40-600 mg daily has been recommended. Intravenous Zn supplements of 2-4 mg/day have been advocated for prophylaxis. However, caution must be exercised as there is one reported fatal case of inadvertent Zn poisoning in the course of hyperalimentation.<sup>51</sup>

An apparent chromium deficiency syndrome has also been reported in an individual, after 31½ years of home hyperalimentation.<sup>52</sup> This was expressed as peripheral neuropathy and glucose intolerance. Both were reversed with CrCl<sub>3</sub> supplementation, but the neuropathy less readily so. Deficiency states involving other trace metals such as manganese, selenium and nickel have not been recognized or described. Routine supplementation with Mn, Se, Cr, and I has been advocated but is not universally accepted or applied. Periodic plasma administration seems to be an imprecise and ineffective means of supplying trace metals, and also entails the risk of hepatitis. Specific additions seem rational; especially Zn and, perhaps, Cu. However, as noted earlier, most of these trace metal deficiency states occur after a considerable course of hyperalimentation.

Hepatic abnormalities during hyperalimentation may be indicated by abnormal liver enzyme studies and histologic evaluation may reveal steatosis, cholestasis, or portal/lobular injury.<sup>56</sup> An elevated transaminase has been observed during enteral alimentation with an elemental caloric source.<sup>71</sup>

Complications related to fat emulsions deserve an expanded comment. Intralipid is an emulsion containing 10% soybean oil and 1.2% phospholipids. The solution is rich in unsaturated fatty acids as it is 54% linoleic acid. This infusate serves to prevent EFAD in patients administered hypertonic glucose-amino acid products. Furthermore, it is an added caloric source and may be administered peripherally. Biochemical evidence of EFAD tends to occur within two weeks in infants and within four weeks in adults administered a fat-free diet.<sup>59</sup> Linoleic, linolenic and arachidonic acids are considered essential, and the latter is a precursor of prostaglandins (PGE<sub>1</sub> and <sub>2</sub>). Arachidonic acid is probably derived from linoleate. Oleic and palmitic acid are made endogenously and are relatively increased in EFAD. A triene (oleic or 5,8,11-eicosatetraenoic acid)/tetraene (arachidonic) ratio > 0.4 is considered diag-



nostic of EFAD. Clinical manifestations include a bizarre array of findings: hair loss, eczema, desquamation, impaired wound healing, elevated liver enzymes, thrombocytopenia, loose stools, staphylococcal infections, notching of "R" waves, capillary fragility and low prostaglandin levels. The significance of the latter is conjectural. When 25% of calories are administered as Intralipid the biochemical pattern can be reversed in 7-10 days. However, early termination of fat repletion is followed by prompt regression suggesting it takes longer to replete tissue stores. Clinical manifestations were observed after abnormal biochemical patterns and were corrected before normalization of these parameters. 4% of calories as linoleic acid have been recommended as a preventive measure although one investigator, as mentioned earlier, has cast doubt on the adequacy of 7-10% of calories as linoleate for this purpose.<sup>66</sup> Topical safflower oil (60% linoleic acid) has been submitted as an alternative to fat infusions in the management of patients on long-term TPN. Although the dermatitis of EFAD can be reversed and transcutaneous absorption is accepted, there is a question whether this application significantly affects essential fatty acid blood levels.<sup>55</sup>

Hepatic dysfunction, significant hyperlipidemias, and the presence of coagulopathy should cause hesitancy in the use of Intralipid. Complications of this nutrient solution include hypertension/hypotension, pancreatitis (possibly), arcus senilis, phlebitis and, perhaps, cerebral infarction.<sup>64</sup> Long-term vascular effects are unknown. A "fat overload" syndrome has been described in a child after almost four months of TPN involving a fat emulsion.<sup>62</sup> Features included seizures, coma, fever, coagulopathy, jaundice, apparent liver dysfunction, and lipid-laden neutrophils.

#### SPECIAL TECHNIQUES:

An innovative area of TPN is home parenteral nutrition. This modality has substantially reduced the cost of medical care and restored some semblance of normal lifestyle for many sufferers of the short gut syndrome and patients with chronic idiopathic intestinal pseudo-obstruction. The Schriber shunt and A-V fistulae were implemented early on but proved to have a short life-span. Furthermore, these accesses required an assistant for TPN administration. Consequently, exteriorized intravenous catheters were developed

and that of Broviac has proven of considerable longevity (up to three years).<sup>67</sup> During disease-free or quiescent periods, the patency of this catheter can be maintained with intermittent heparin instillation. Of course, these catheters are subject to the complications of any indwelling appliance; namely, sepsis and thromboembolic phenomena. The infusion is usually carried out overnight and tapered to prevent hypoglycemia. A reasonable cost estimation of such a venture is \$2000/month.

Peripheral parenteral alimentation has been encouraged as it avoids the catheter and hyperosmolar complications of conventional therapy. This mode of nutritional support is also reasonable in that low-density glucose/amino acid or Intralipid/amino acid combinations have been shown to effect nitrogen conservation similar to that of conventional solutions.<sup>16</sup> The resultant solution customarily has an osmolality of approximately 90 mosm/kg. Osmolar concentrations > 500 mosm/L invariably cause vascular irritation. However, this thrombophlebitic effect can be mitigated or prevented with supplemental hydrocortisone (5 mg) and heparin (500 U) in the nutrient solution.<sup>73</sup> This measure is particularly applicable in the case of the patient who can sustain some oral intake.

Post-surgical enteral alimentation is an important area in that hypoalbuminemia has been associated with impaired healing and delayed motility. Therefore, a specially designed feeding tube has been developed by Moss<sup>69</sup> and needle catheter jejunostomy has been popularized by Delany<sup>68</sup> in attempts to approach this problem. Enteral nutrition can be delivered in the form of Isocal or a similar product. Elemental formulations are generally not required, are expensive, and, as they are hyperosmolar, tend to cause cramps and diarrhea. Continuous administration is probably more acceptable than bolus feedings.<sup>72</sup> Objective validation of this therapy is illustrated by Moss in that positive nitrogen balance was achieved within hours of initiation of enteral therapy whereas, heretofore, this has required 6-10 days. Various feeding tubes are available, but a simple measure is implementation of a 24 inch, 14 gauge Intracath. A complication of this technique is otitis media, due to closure of eustachian ostia, which may foster meningitis.<sup>70</sup> Formula selection and feeding tube information are covered in a recent review of this modality.<sup>81</sup>

**TECHNICAL ASPECTS:**

We shall now address technical considerations in TPN administration. The subclavian vein is the desirable site for catheter institution as the right atrium, internal jugular vein, and peripheral accesses are subject to a higher incidence of unacceptable or invariable risks.<sup>33,38</sup> The administration line should be changed every 48 hours with the subclavian dressing change. The .22 micron filter has been advocated as it screens out bacteria and fungi while the .43 micron filter traps particulate matter and, perhaps, fungi. However, these in-line filters may severely compromise the rate of fluid administration. Some institutions have thus abandoned them completely and have resorted to double-filtering in the pharmacy. Also, selective cultures are more apt to be positive on the patient side of the filter. Finally, the mechanism of catheter sepsis is more likely due to catheter ingrowth (extrinsic) rather than intrinsic access. Amphotericin flush<sup>74</sup> has been touted in the past, but this is probably not efficacious for reasons mentioned above. Furthermore, it is difficult to justify any injectable addition to the central line.

Subclavian care is a murky issue as skin colonization is correlated poorly with septicemia. Also, sepsis seems to be unrelated to the duration of catheterization and there is a low incidence of catheter positivity in the face of positive blood cultures. Nevertheless, with regard to skin colonization, one study demonstrated no superiority of various antibacterial, anti-fungal, or combination products in suppressing skin flora.<sup>76</sup> Rather than the ointment applied, the method of skin preparation appeared to be the most important aspect of care. However, Providine was compared to saline.

Specific solutions and additives are well known and are only appended to the paper. Monitoring involves vital signs, weights, I & O, and periodic assessment of mental status. A disturbance in the latter could represent hyponatremia, hyperglycemia, hyperosmolarity, hyperammonemia; low phosphate, zinc, or magnesium; sepsis, hypoxemia or other aberrations. Urinary glucose determinations are important but, as mentioned before, have limitations. Lytes, BUN and BS should be obtained daily, or more frequently, initially, until deficits are repaired and the patient's degree of glucose tolerance is manifest. Baseline Mg, Ca, PO<sub>4</sub> levels must be acquired

and followed at least twice weekly. Clotting parameters (PT, PTT, platelets and, perhaps, bleeding time), "liver function tests", and lipid levels are essential if the use of Intralipid is contemplated. Periodic CBC's are mandatory and baseline serum and red cell folate, Fe and TIBC can be justified. Serum osmolality, ammonia level, and arterial blood gases may be indicated in the event of mental torpor. (Intralipid only effects a slight drop in D<sub>co</sub> and PaO<sub>2</sub>). The arterial pH may prove helpful in assessing apparent hypokalemia, etc. Periodic albumin determinations are helpful in that the therapeutic end-point may be predicated to a degree on restitution of normal levels. Gross turbidity of the serum can be used as a guide to frequency of Intralipid administration. Serum creatinine and uric acid as well as urinary calcium<sup>77</sup> may also prove of benefit.

When the decision is made to discontinue TPN therapy, a tapering process should be enacted to allow readjustment of insulin levels. Furthermore, anatomic and physiologic studies in experimental animals and man have revealed structural and functional deficits after TPN.<sup>86</sup> Motility has been preserved.<sup>79</sup> Thus, a gradual tapering of TPN with the institution of oral feedings is advisable to avert disaster (hypoglycemia) and to allow optimal assimilation.

**ADDENDUM**

\*Freemine II 6.25 gm N / 500 cc = 156 cal

500 cc D<sub>50</sub>W = 250 gm Dextrose = 1000 cal

1 L Nutrient Sol = 1156 cal

Intralipid 1.1 cal/cc × 500 cc = 550 cal

TPN solution administered continuously whether one or three bottles/24 hr.

Intralipid administered peripherally: 1 liter over 8-12 hrs.

2 L/day of D<sub>50</sub>W-Freemine II and 1L of Intralipid = 3412 cal with a nonprotein/N ratio of ~ 150

\*Some prefer Travasol as it contains more phosphate and acetate.

2 L of Freemine II supply 20 mEq of Na and 40 mEq of PO<sub>4</sub>.

Further additions are usually required; particularly of Na.

Ca<sup>++</sup> adm. of at least 4.8 mEq/24 hr is necessary in view of phosphate administration.

K<sup>+</sup> requirements of 60-120 mEq are not unusual and acetate adm may be necessary if significant Cl<sup>-</sup> is being given in conjunction with sodium



and potassium.

8-16 mEq Magnesium/day.

B<sub>12</sub>: 0.25-1.0 mg IM monthly recommended. Alternative, 10 µg to each liter of solution (tedious).

Folate, 5 mg IM weekly or, perhaps, 1 mg po daily.

Vit K<sub>1</sub>, 10-20 mg IM weekly.

MVI preparation, 3-5 cc daily.

Intravenous or IM Fe as required.

Insulin (if BS > 200 mg% = 10-25 U Req insulin/1000 cal — added to the nutrient solution. (Best to err on the low dose side!) Some prefer subcutaneous administration. If protracted TPN therapy (3-4 wks) consider: Zn 10-15 mg/day Cu - 2-5 mg/day, Cr - 250 µg CrCl<sub>3</sub> daily (usual oral intake though probably exceeds requirements).

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(Especially good papers are identified with an asterisk\*)

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# Office Orthopaedics

## Fracture Non-unions

C. Frank Dodson, Jr., M.D.<sup>†</sup>

A new form of treatment to aid with healing of fracture non-unions, failed fusions, and congenital pseudarthroses, has recently been introduced and placed on a commercially available basis. The device is called the Bi-Osteogen System and is marketed by Electro-Biology, Inc. The major portion of the design and investigational studies of this device was done at the New York Orthopaedic Hospital and the Columbia Presbyterian Medical Center in New York City under the direction of C. A. L. Bassett, M.D. These studies began in 1964 and only within the past year has the combination of this investigational work resulted in a widely available device for use on patients with difficult non-unions. The unique feature of this treatment device is that it does not require implantable electrodes as do some of the other devices, and thus no surgical procedure to apply this device is necessary. The only surgery that might be related would be an open reduction necessary to establish satisfactory alignment of the fracture fragments, and thus in most cases the possibility of iatrogenic infections are avoided.

The basic concept on which this device is based is that electrical activity is distinctly detectable in healing bone. This treatment device induces very small voltage in the bone stimulating healing to occur. This current is generated by two circular-shaped coils of wire placed on opposite aspects of the fractured limb, either in the anteroposterior plane or the mediolateral plane. These coils are fastened around the splinted or casted limb for approximately 10-12 hours daily. Most patients find the sleeping period the most convenient to apply the device, but since it is portable, it could

be applied during the day if the patient's occupation was suitable, such as desk work. The voltage which is delivered to the fracture site is very specific and the device must be calibrated to the exact specifications of each particular patient. This is determined by the external dimension of the cast, or the limb itself if no cast is present. These dimensions are forwarded to the manufacturer by the treating physician, and the coils are calibrated at the factory before being sent to the physician for application on the patient. The device is applicable to patients with internal fixation devices in place, such as intramedullary rods, the only qualification being that the metallic implant must be non-magnetic. The stainless steel used for most implants is Type 316L, which is non-magnetic.

Published success rates for cases utilizing this device include: 88% healing of acquired non-unions in the tibia, 70% union rate in the femur, and 80% with forearm bones. Fractures with active drainage and evidence of osteomyelitis may be treated with this method. Also, failed fusions of the wrist, ankle, and shoulder may be treated with this device. The other major classification of lesions suitable for treatment with the electromagnetic waves include congenital pseudarthroses. This is a particularly attractive alternative as the success rate of inducing union in such cases with any form of surgery is very low, and amputation is usually required after multiple unsuccessful surgical procedures. Approximately 75% of such lesions have healed with application of the Bi-Osteogen System. Average time for healing to occur after application of the device is in the range of three to seven months. When applied to fractures of the lower extremity, patients are kept non-weightbearing during the period of

<sup>†</sup>Dr. Dodson died April 26, 1980.



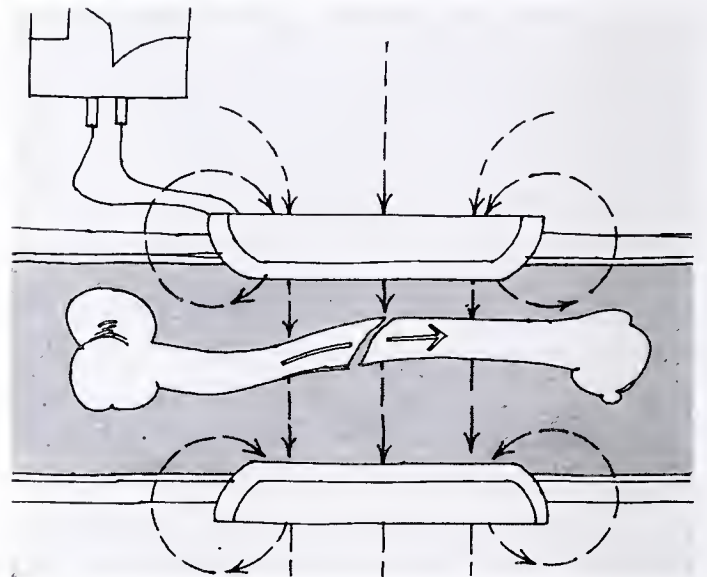


treatment with this device. Regular office visits are a necessity during the period of treatment for inspection of the lesion, both radiographically and clinically.

Although this device is quite new and untested on a large scale in the general population, the early investigational studies appear to have been well designed and carried out, and provides an optimistic, non-invasive alternative to the treatment of otherwise very difficult orthopedic lesions.

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This unique treatment induces weak electrical current levels (1000 times less than those supplied by cardiac pacemakers or transcutaneous nerve stimulators) to promote bone formation in the fracture site. The treatment head produces a time varying electromagnetic field that induces a specific current pattern in the fracture site, causing mineralization of the tissue in the fracture gap. The induced current also aids vascular penetration and bone formation by a process resembling normal endochondral ossification.



# ELECTROCARDIOGRAM

# OF THE MONTH



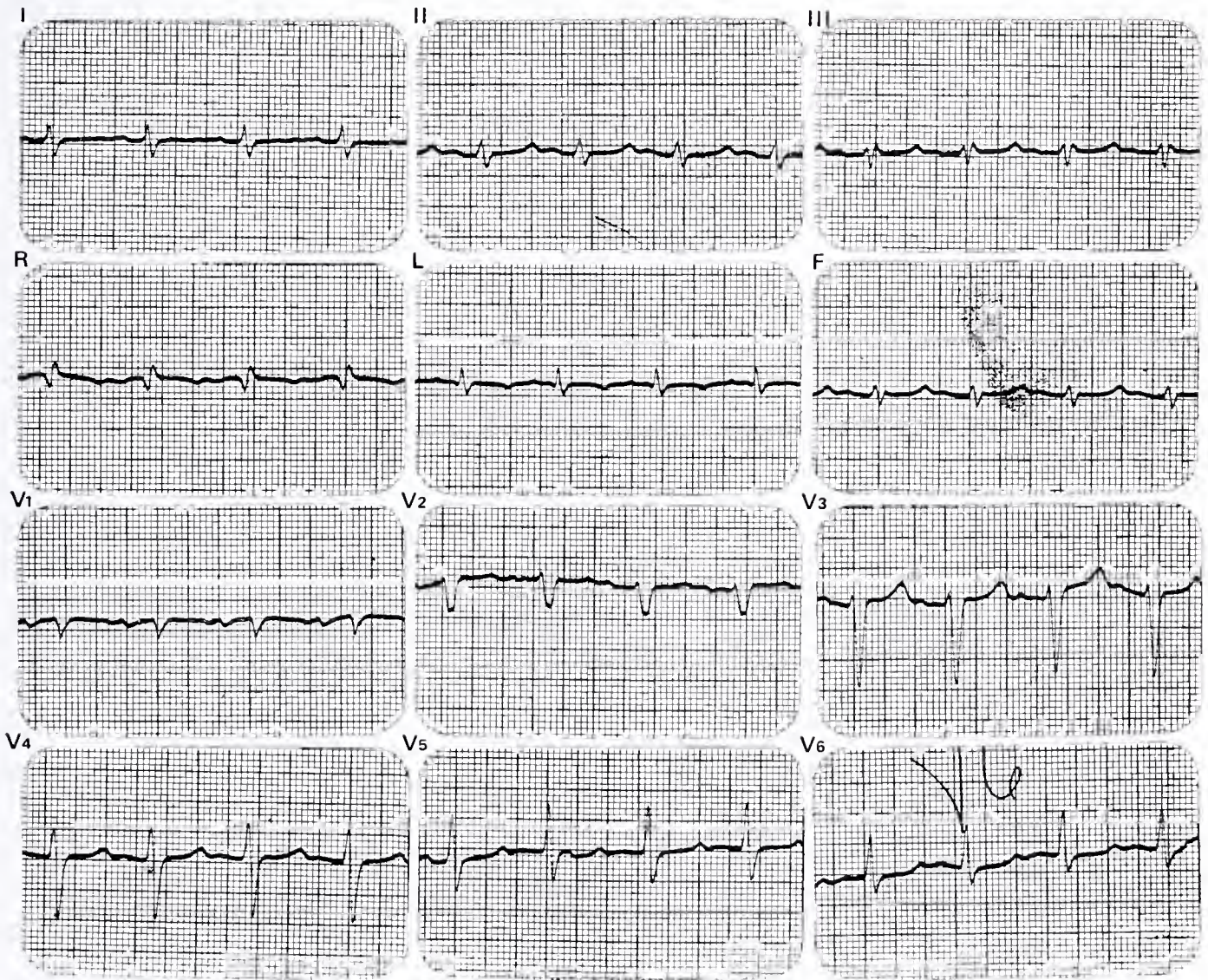
The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 78)

**HISTORY:** J. F. is a 44-year-old woman with chronic renal failure. She has a past history of congestive heart failure and schizophrenia.

Her ECG, shown below, is consistent with which of the following?

- A. Phenothiazine Therapy.
- B. Quinidine Therapy.
- C. Hypocalcemia.
- D. Digitalis Therapy.



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# Pediatric Review:

## Diagnostic Approaches to Birth Defects in the Newborn

### How to CAPTURE the Diagnosis

W. R. Collie, M.D.\*

#### Introduction:

In 1978, a physician in San Francisco stated that "Every now and then an area of medicine is discovered that is so poorly done that the recognition of the dilemmas is acutely shocking and disgraceful. Nowhere is this more true than in diagnosing and counseling for the malformed abortus, stillborn, and deceased newborn. . . . The goal of increasing commitment to achieving higher diagnostic rates must be pursued. The involved families deserve this for they have lost a dear child and answers are the least we can give to them."<sup>4</sup> Today's modern practitioner of medicine has available a variety of sophisticated tests and diagnostic procedures which can be used in determining the etiology of birth defects in the newborn. Where children with birth defects are concerned, more than ever before, these diagnostic tools in the physician's armamentarium are capable of helping him arrive at an accurate diagnosis and thereby provide the anxious family accurate information regarding longevity, prognosis, and recurrence probabilities. The purpose of this article is to list in a concise fashion some of the diagnostic options which are readily available to every physician in Arkansas.

#### Text:

A birth defect can be defined as any abnormality present at the time of parturition which subsequently will adversely affect the health of the child. Included in this category are more obvious defects such as cleft lip and palate, congenitally dislocated hips, and absence of the cranium, or anencephaly. Birth defects can be either visible or non-visible however. Some defects which are less obvious include phenylketonuria, pyloric stenosis and Huntington's chorea. Obviously, this article will be limited to the abnormalities diagnosable in the newborn period.

Although outward appearance changes with gestational age, the diagnostic approach to birth defects in the fetus, abortus, stillborn, and new-

born is basically the same and will be discussed accordingly. Each technique herein described is to be used by the practitioner whenever appropriate in each individual case.

The acronym CAPTURE is specifically designed to help the busy clinician remember what steps to take when seeking to "CAPTURE" the diagnosis in a fetus or newborn with a birth defect. First in our acronym is the letter C, which stands for chromosomal analysis. It is known that at least 1/3 of all spontaneous abortions up to 28 weeks of gestation have chromosome abnormalities which can be demonstrated at the time of the abortion.<sup>1,2</sup> These abnormalities currently are felt to be causal in the fetal loss. Studying the karyotype (chromosomal features) of a spontaneously aborted child is therefore *very* important, helping us to better understand and explain the pathogenesis of the abortion. Blood from the study should be sterily taken from the umbilical cord, the placenta, an intracardiac puncture, or from the sagittal sinus. The syringe should first be heparinized with .1 ml of either 1/1,000 or 1/10,000 U heparin; following aspiration of four ml of blood the syringe is capped, and sent intact to the cytogenetics laboratory. If the blood is to be kept for several hours or for a day prior to delivery in the laboratory, it should be kept in a standard refrigerator (*not* freezer) until it can be shipped. Alternatively, if heparin is not available, a green-top tube (anticoagulated with powdered lithium heparin) may be sterily filled with blood and stored.

If the child is stillborn or if the physician is called to see a patient sometime after death and the blood cannot be obtained, a sterily-taken skin biopsy (to include the epidermis and dermis) can be placed in a tube of sterile, nonbacteriostatic saline or tissue culture media and forwarded to the chromosome laboratory. Surprisingly, this skin biopsy can be taken up to seven days after death and be viable if the body has been kept cool.

A high yield in malformed live-borns is also anticipated, and if pursued in a likewise manner should give frequent positive results. For a

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simple treatise on this subject, the reader is referred to Valentine's monograph.<sup>3</sup>

The second part of our acronym, "A", stands for autopsy. It is important that an autopsy be obtained in every case where one or more major congenital malformations are present or are suspected in the newborn. Families who are understandably struggling with their shock and grief at this time must be approached by the clinician in a compassionate, yet firm way so that autopsy can be granted and important information obtained by the pathologist. We in the Genetics Unit at the University all too frequently are referred bereaved young couples desirous of genetic counseling who have no diagnosis assigned to their lost child. Of course, such couples can rarely, if ever, be appropriately counseled. Since it has been established that up to 50% of such parents can be accurately counseled regarding future reproductive risks following careful diagnostic procedures which CAPTURE the diagnosis,<sup>4</sup> it behooves us as clinicians to evaluate each pregnancy and its outcome appropriately.

"P"hotographs of the facial features of each child suspected of having a congenital defect of the structural type are very important. Also, visual documentation of any associated anomalies such as club hands, birthmarks, omphaloceles, etc., are highly useful to the Pediatric Geneticist. These pictures can be taken with any useable camera, such as a Polaroid camera, a Kodak Instamatic, or the more sophisticated single-lens reflex equipment which many physicians keep in their offices. Should none of these be available, even a picture of the child or abortus taken with the hospital's standard "baby picture" equipment is acceptable. Enough emphasis cannot be placed on this visual aspect of capturing the diagnosis in one's patients, because even the most skilled physician will at times be unable to fully and accurately convey the appropriate descriptors which can alert the geneticist to an accurate diagnosis for that family. Because visual documentation of each child's anomalies is so important, every effort should be made to photograph a child who is suspected to be abnormal.

TORCH (TOxoplasmosis, Rubella, Cytomegalic inclusion disease, and Herpes) titers should be drawn on *every* child with a structural birth defect. Sometimes the appearance of an unsuspected intrauterine infection is documented in

this way; we here at the Genetics Unit have recently seen three such cases in which mothers bore children with birth defects not usually associated with congenital infection; elevated titers were found however, indicating coexistent maternal infection. There have been many more typical cases where the constellation of clinical findings (such as cataracts, deafness and patent ductus arteriosus in the rubella syndrome) are associated with positive titers drawn by the clinician at the time of birth. If the child is alive at six weeks of age, then "convalescent" titers should be drawn also. Maternal sera should also be obtained at these times. The TORCH titers are quite important and we view them as an integral part of the workups of every deformed child. Other, more detailed tests can be performed and are indicated in patients where the clinician has a high index of suspicion that a congenital infection has occurred.<sup>5,6</sup> We can be contacted through the MIST Service at the University for further information in such cases.

The "U" in "CAPTURE" stands for urine testing, encompassing a variety of sophisticated laboratory procedures which can be quickly and easily performed in the Metabolic Laboratory at Arkansas Children's Hospital, providing a great deal of information on children with suspected inborn errors of metabolism. Particularly pertinent in cases where neonatal hypoglycemia, hyperammonemia, or severe acidosis are present, these tests can be invaluable clues, leading the physician to the appropriate diagnosis. It is common for children with metabolic birth defects to present as outwardly-appearing normal, healthy term newborns. Following their first few protein feedings, they become acidotic, go into shock and then succumb. As we have become more adept in recognizing the clinical signs which accompany such previously unexplainable deaths, we are diagnosing more and more of these conditions in time to save the baby and to also render genetic counseling to the family. I personally have seen just such a case where urine was obtained and immediately frozen on a female infant who was otherwise well until protein loading (milk feedings) was begun. She became overwhelmingly acidotic, was thought to have "sepsis" and died shortly thereafter. Her alert physician, however, by freezing and testing the urine from this child's last voiding made the correct diagnosis and enabled her parents to later have a healthy, intelli-



gent sibling. Anytime a physician suspects an inborn error of metabolism in a neonate, urine should be obtained and frozen immediately. Bacterial action upon the specimen otherwise will quickly render it useless for scientific investigation. Oliguria is frequently seen in patients with inborn errors of metabolism, since they present in what appears to be a "sepsis-like" manner, with shock and systemic acidosis. In such children, a bladder tap is indicated to obtain residual urine in these instances. Such specimens can be invaluable in helping CAPTURE the diagnosis in these families, and I personally have observed a case in which the frozen urine was still positive for the abnormal metabolites when tested nearly 10 years after its initial collection! In these neonates, the urine is often the only clue we have to making the correct diagnosis after death.

"R"adiographic investigation of children with multiple malformations is an absolutely essential part of every diagnostic work-up. At the minimum, there are two views necessary for establishing the diagnosis in the malformed or dwarfed neonate. These include an AP "Babygram" taken of the entire product of conception on one large film such as an adult chest plate, and a lateral total-baby view. Specific radiographs should be taken also of any particularly obvious deformities, such as club hands, malformed skulls, shortened limbs, etc. Again, we cannot emphasize too strongly that many complex malformation syndromes could be diagnosed accurately, if only the attending physician would take the time to obtain the appropriate radiographs along with the other above-mentioned studies. Admittedly, it seems rather anticlimactic to carefully investigate a newly-dead child who has just succumbed despite your most strenuous efforts to keep it alive in the nursery. However, the long-term importance of determining the correct diagnosis cannot be overstated. Bereaved young parents are extremely grateful when correct diagnoses are applied, and when they can be given a fuller understanding of why their baby died.

"E"xamination of the placenta should also be done by the attending physician whenever a child with multiple somatic abnormalities is delivered. In addition to finding grossly visible abnormalities such as shortened umbilical cords as are associated with oligohydramnios, calcifications and infarctions of the placental structure as seen with

congenital infections, and others, the placenta itself can also be cultured for such infectious agents as toxoplasmosis or cytomegalovirus, and where indicated, enzymatic determinations can be carried out to better define suspected biochemical errors.

It is incumbent upon every physician dealing with pregnant women and their offspring in Arkansas to exercise the correct approach to patients with birth defects. The acronym CAPTURE should serve to outline, organize, and ultimately enhance our efforts directed toward this end. When such data are collected, the responsible physician can be assured that he will have acquired pertinent information which can then be used by the Pediatric Geneticist in assigning a diagnosis, counseling and giving accurate recurrence risks to the family.

#### AN APPROACH TO THE NEWBORN WITH

C — Chromosomal Analysis —

A Autopsy

P Photographs

T TORCH titers

U Urine Screening

R Radiographs

E Examine the placenta

#### WITH SUSPECTED BIRTH DEFECTS

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## EDITORIAL

# Arthritis

Alfred Kahn, Jr., M.D.

Disorders of the joints are one of the major causes of disability, especially in the older age groups. There is a good deal of research in the various types of arthritis but no important breakthrough from an etiologic or therapeutic point of view.

Howell, Woessner, Jimenez, Seda, and Schumacher have reviewed the pathogenesis of osteoarthritis in *The Bulletin On The Rheumatic Diseases* (Volume 29, pg. 996, 1978-9 series). As they point out, articular cartilage is made up of two principal parts: collagen and proteoglycans. Collagen occupies about 50% of the volume of cartilage and holds the hydrophilic proteoglycans together. The authors report that the large proteoglycan molecules have such an avidity for water they can bind 1,000 times their weight if they are unconstrained by collagen. In cartilage, the proteoglycans cannot use up their full capacity for binding water and this causes an intracartilage pressure of five times atmospheric pressure. In osteoarthritis, it is postulated that injured cartilage cells release proteoglycanases which destroy proteoglycans. Other destructive enzymes are also released; there are enzymes recently discovered which have collagenase activity and tend to destroy collagen. One other interesting hypothesis concerning osteoarthritis is that the diseased cartilage may have a different partition of collagen Type I and Type II. It has further been suggested that the collagen in osteoarthritis is not mechanically adequate and allows proteoglycans to escape from the cartilagenous tissue. Howell, et al., state that some research indicates mechanical factors injure cartilage as loss of bone elasticity with age, thus "overloading" the cartilage, shifting of the load bearing surfaces due to bone remodeling, and microtrauma of various types. Oddly, pure obesity ap-

parently plays less of a role in osteoarthritis than faulty alignment of articulating surfaces.

Reiter's Syndrome used to be considered a mild self-limited disease consisting of urethritis, conjunctivitis, and arthritis, but in a review of 131 patients, Fox, Calin, Gerber, and Givson (*Annals of Internal Medicine*, Volume 91, page 170, August, 1979) found considerable chronicity of symptoms. They were able to follow arthritis in 83%, urethritis or cervicitis in 42%, eye discomfort in 31%, heel pain in 45%, and back pain in 51%. The mean age of these patients was 34 years at the followup and 85% were males. The authors feel that at least 30% of the cases of Reiter's Disease have significant disability. The symptoms tend to be relapsing although they may be constant. The disability was severe enough to cause loss of work time; interestingly, foot pain was a major component in the disabled patients.

Lyme arthritis is a newly described clinical entity first reported in the past several years. The Yale University group has several recent articles on this disorder. Steere, Gibofsky, Patarroyo, Winchester, Hardin and Malawista wrote on the clinical and immunogenetic differentiation of Lyme arthritis from rheumatoid disease. They characterize Lyme arthritis as "asymmetric, oligoarticular swelling and pain affecting primarily large joints, or migratory; polyarthritis, in large and small joints (*Annals of Internal Medicine*, Volume 90, page 896, June, 1979). The arthritis is associated with an annular skin lesion. It may be associated with cardiac nervous system signs. The vector is thought to be a tick, *Ixodes scapularis*. Ten cases are reported in this series — and they were considered chronic cases with arthritis of the knee(s). The authors excluded Reiter's Disease and rheumatoid disease. There was no urethritis, mucocutaneous lesions, or iritis as in



Reiters; nor were there the signs of rheumatoid disease as symmetrical polyarthritis, morning stiffness, positive R.A. tests, or subcutaneous nodules. The joint fluid in Lyme cases had 10,000 to 25,000 white cells per cu MM and the synovium was thickened. Seven of the ten cases of Lyme arthritis were said to have alloantigen DRx2. Steere, et al., postulate that Lyme arthritis is triggered by a tick bite which sets up an inappropriate immune response.

In the December 20, 1979, issue of *The New England Journal of Medicine* (Volume 301, page 1358), the Yale Group Hardin, Steere, and Malawista published an "Immune Complexes and the Evolution of Lyme Arthritis," with emphasis on dissemination and localization of abnormal Clq binding activity. They reported here the relationship of circulating immune complexes to the development of the clinical disease using Clq binding activity. They reported here the relationship of circulating immune complexes to the development of the clinical disease using Clq assays. For example, the premonitory skin lesion of Lyme arthritis is erythema chronicum migrans; in cases of Lyme arthritis, this skin disorder was associated with high levels of the immune complex Clq. They state that the titer falls if the patient has only arthritis, but if cardiac or nervous system symptoms develop, the titer remains elevated. High Clq level in synovial fluid was associated with cellular reaction in the joints which suggested an interrelationship of immune marker and inflammatory reaction. Hardin, et al., have also found that immune globulin M increased with flare-ups of arthritis and immune globulins G and A reacted oppositely. Cryoglobulin tends to parallel disease activity for a short time, but the relationship is not as strong as with Clq.

The immunopathogenesis of rheumatoid arthritis was reviewed by Paget and Silver in *The American Journal of Medicine* (Volume 67, page 961, December, 1979). They feel that an immune disorder produces and perpetuates rheumatoid arthritis. They explain that the immune response in rheumatoid disease is both cellular and humoral. The lymphocytes, B-lymphocytes and macrophage release immune substances in the synovium which form complexes with antigen. It is postulated that the rheumatoid process develops only in certain genetic types and it seems that it may be over reaction to some stimulus as a bac-

teria, for example. The humoral immunoglobulins can be made in the synovium, and this accounts for 20%. The authors state that rheumatoid factor in the serum tends to parallel sustained rheumatoid disease, but some cases of rheumatoid disease are R.A. negative. They have proposed a scheme to account for the pathogenesis of rheumatoid inflammation; it is shown diagrammatically in their article. Paget and Gibofsky feel that the principal happening is an antigen antibody reaction in the joints. This is followed by a "complement cascade". That in turn leads to a neutrophil invasion. The neutrophils ingest immune complexes after which lysozymes are released causing articular damage. Collagenase is also released which could injure the cartilagenous matrix.

Psoriatic arthritis is the subject of an excellent review in *The Journal of the American Medical Association* by Loebel, Kirby, Stephenson, Cook, Mealing, and Bailey (Volume 242, page 2,447, November 30, 1979). They describe four forms: an oligoarticular asymmetric type, a rheumatoid-like disorder, a mutilating variety, and a distal interphalangeal type. The histopathology is said to have two distinctive characteristics: distal joint involvement and severe destruction in the articular surface and nearby bone. Furthermore, as compared to rheumatoid disease psoriatic arthritis is reported to have: less fibrin and synovial proliferation, early fibrosis, less cellular infiltrate, different behavior of the pannus, and more osteolysis. There seems to be a genetic factor in psoriatic arthritis as demonstrated with HLA-B27.

The arthritic disorders are better understood now than in previous years, but they remain only partially conquered from a treatment point of view.

#### ANSWER—Electrocardiogram of the Month

DISCUSSION: The ECG shows a sinus rhythm. The PR interval is 0.22 seconds. The corrected Q-T interval calculated by Bozett's formula ( $QT$  interval divided by the square root of the R-R interval) is 0.52 seconds with the upper limit of normal being 0.42 seconds. Thus, the QT interval is greatly prolonged. Phenothiazines, Quinidine, Hypocalcemia, and Hypomagnesemia are all associated with prolongation of the QT interval. Digitalis shortens the QT interval but may prolong the PR interval. No standards are shown, so one cannot comment on the apparent decrease in voltage. Nonspecific ST-T changes are present also. Hence, the ECG is consistent with all the choices given.

# "From Other Years"

Arkansas Medical Monthly

Vol. 1 No. 3 June, 1880 pp. 144-145

## OUR FEE BILL

The medical profession of Little Rock are, in our opinion, recklessly disregarding their own interests by sustaining the present high-priced fee bill. We cannot conjecture any possible benefit to be derived from its existence. It is utterly impossible to comply under all circumstances with its requirements, and it therefore only serves as a scare-crow to drive patients from us, who, in this event, either seek the prescribing druggist or a homeopathic practitioner. The cases in which it is admissible to charge, and possible to collect, three dollars per visit, occur in the practice of this city very seldom, and where they do, such charges may be made as well without the existence of a fee bill as with it. Office practice among the regular physicians of this city amounts to a very small consideration, whereas the homeopathic practitioners reap a handsome competence from such work. We cannot deny the fact that many of these last-named practitioners are men of intelligence, and judging from their credentials, acquired from our own schools, show evidence of good professional education. When we acknowledge these facts, and then admit that they secretly employ our system of practice, we must accord them the capacity of doing some good to their patients. Then consider the fact that these patients get their prescription and medicine for one dollar, while we charge two dollars for prescription alone, and you have a key to the success of homeopathy. Again, consider that a large number of patients who possibly have no confidence in homeopathy, but are not inclined, if able, to pay two dollars for prescription and extra for medicine, will risk the prescribing druggist. These combined influences impoverish the regular practice, and it is blind folly for us not to see it. There is not a physician in the city of Little Rock who adheres, under all circumstances, to the fee bill in his charges. As I said before, it is impossible to do so. Then why not abolish it? It is a weapon in the hands of those who might desire to injure us. The profession of large cities are not governed by such proscribed measures, but the practitioner charges in proportion to the efficiency of his services, or as much as his reputation will justify him in demanding. . . .

The reputations of our leading physicians are made, and they can afford to continue their indulgence in high fees, and need not fear the cheap doctors. Therefore our present fee bill affords nothing but a disadvantage to the entire profession of this city, and is without any feature to recommend its continuance. As a protection against opposing sects in medicine, and prescribing druggists; for the benefit of our honest patrons; and because it is non-effective, except in its unjust influences against the interests of young practitioners, and evinces a selfish spirit among the old and governing members of our societies, with a tendency to disintegrate them, and avert the true principles of such organizations — for these sufficient reasons we suggest that our fee bill be abolished.

## FEE BILL

1869

Established by the Medical Association of the City of Little Rock and Pulaski County.	
For a visit and prescription within the city	\$ 3.00
For a visit and prescription across the river, within half a mile of river	5.00
For visit and prescription out of the city, not exceeding one mile (and charge for medicine)	5.00
For a call visit and prescription within the city	3.00
For a call visit and prescription out of the city (and charge for medicine)	5.00
For a night visit within the city	6.00
For a night visit and prescription out of the city, not exceeding one mile (and charge for medicine)	10.00
For extra prescription where two or more are sick in one family, not less than	2.00
For prescription at the office or within the city	2.00
For prescription at the office for the country not less than	2.00
For letter of advice and general directions not less than	6.00
For vaccination in the city (and charge visit)	2.00
For vaccination out of the city (and charge mileage)	2.00
For cupping	5.00
For venesection (and charge visit)	2.00
For introduction of ceton or issue	5.00
For introducing catheter or bougie	5.00
For attention in all cases per hour (day)	3.00



# FROM OTHER YEARS

For attention in all cases per hour (night)	5.00	For paracentesis abdominis (in the country charge mileage)	25.00
For opening boil or abscess (and charge visit)	1 @ 5.00	For paracentesis thoracis (in the country charge mileage)	35.00
For visit in the country exceeding three miles, per mile, (and charge prescription, medicine, and other services, as above)	1.50	For fistula in ano or perineo (in the country charge mileage)	50.00
For a night visit in the country, per mile, (and charge prescription, medicine and other services)	4.00	For bronchotomy (in the country charge mileage)	50.00
For prescription in gonorrhoea	20 @ 20.00	For aneurism (in the country charge mileage)	50.00
For prescription in syphilis, not less than	10.00	For lithotomy or strangulated hernia (in the country charge mileage)	200.00
For extra cases of gonorrhoea or syphilis, charge according to circumstances		For examining with speculum per vaginam, not less than	10.00
For examination of suspected cases	5.00	For attendance in contagious diseases double the ordinary charge	
For visit and consultation in the city (day)	13.00	For post-mortem examination by order of court or any constituted authority (and mileage) not less than	50.00
For visit and consultation in the city (night)	15.00	-----	
For each succeeding visit (night double)	5.00	Night visits to be calculated after 9 o'clock in the spring and summer months, and 6 o'clock in the fall and winter months.	
For visit and consultation in the country (and charge mileage)	13.00		
For visit and accouchement in the city (day) not less than	25.00		
For visit and accouchement in the city (night) not less than	30.00		
For visit and accouchement in the country (charge mileage) not less than	25.00		
For visit preternatural, difficult or lingering, charge according to circumstances			
For amputation of the thigh, leg or arm, not less than	100.00		
For amputation of the thigh, leg or arm, in the country (charge mileage)	100.00		
For each subsequent dressing (and charge visit)	2 @ 5.00		
For reducing fracture of thigh, leg or arm (if in country ch'ge mileage)	20 @ 50.00		
For each subsequent dressing (and charge visit)	2 @ 5.00		
For reducing compound fractures (in the country charge mileage) not less than	50.00		
For reducing dislocation of the hip joint (in the country charge mileage) not less than	100.00		
For reducing dislocation of the shoulder, elbow, wrist or ankle (in the country charge mileage) not less than	25.00		
For each subsequent dressing (and charge visit)	2 @ 5.00		
For trephining (in the country charge mileage) not less than	100.00		
For hydrocele (in the country charge mileage) not less than	20 @ 20.00		

Arkansas Medical Monthly

Vol. 1 No. 8 Nov. 1880

## LITTLE ROCK DRUG MARKET REVIEW CORRECTED MONTHLY BY J. A. JUNGKIND, WITH C. J. LINCOLN, WHOLESALE DRUGGIST.

The demand for drugs during the past month has been fair, and up to the standard at this season of the year.

Prices have been steady, with few exceptions. The most notable decline has been that of Quinine.

The foreign market is lower, the American demand for foreign Quinine having considerably slackened of late. The autumn having passed without the occurrence of any serious epidemic, eastern holders of this valuable remedy find themselves for the moment largely overstocked.

P. & W. Quinine is quoted now at \$2.60 in ounces, and P. & W. Cinchonidia at 85c. in ounces.

Gum Opium is quiet at \$7.50, although the assurance of an Opium famine is still maintained. Yet in the face of this Morphia has declined. P. & W. Morphine is now held at \$4.60 per ounce. S.N. Bismuth has advanced slightly.

Glycerine is steady at 33c., and in good demand. Mercurials remain unchanged in price.

In Spices, Black Pepper and Allspice are higher; while all the others are firm.

Iodine and Iodide Potassium have declined.

Bromide Potassium is now held at 45c.

On Window Glass a discount off the 'A' list of 50 per cent is given. Small sizes are very scarce.

Alcohol (sic) \$2.30 per gallon is asked.

Oils of Cubebs, Cloves and Sassafras are higher.

*Arkansas Medical Monthly*

Vol. 1 No. 9 Dec., 1880 p. 408

**DRUG STORE FOR SALE**

A small Drug business in Argenta, Arkansas — a place of about 1000 inhabitants and rapidly increasing. Stock worth between \$450 and \$550. A splendid location for a good physician. Terms cash. Call on or address M. W. Sangster, Argenta, Pulaski county, Arkansas. Reason for selling, bad health.

*Arkansas Medical Monthly*

Vol. 1 No. 9 Dec., 1880 pp. 404-405

**A UNIQUE CASE**

**By Dr. J. J. Jones, Sr.**

Having recently observed in my obstetrical practice the following singular congenital condition affecting a child which I delivered, I conclude to report the same to your journal:

I was called on the 1st of December, 1880, to see Mrs. T., in her fourth labor, aged 30, in robust health. And after an easy and natural labor of ten hours' duration, she gave birth to a large and well-developed child. It was apparently in excellent condition, and unusually vigorous. On its left side, about one inch below the crest of the ilium, and immediately in front of the sacro iliac symphysis, extending obliquely upward, and partially across the lumbar vertebrae, was a blister filled with serum, with hardened indurated edges, evidently of several hours' duration. It was two inches wide and four and a half long. The serum was evacuated and the blister dressed with cosmoline. The next day it presented a dark aspect, and had evidently extended itself about one-eighth of an inch all around. I had it dressed with an ointment made of cosmoline, oxide of zinc and carbolic acid during the day, and at night directed a slippery elm poultice. Third—The center of the blister was quite black, but it had not extended any further on the surface, and the edges showed less inflammation; continued the same treatment. Fourth—The slough was suppurating, and healthy pus exuding from be-

neath its edges. On the fifth the slough came away entirely, leaving a healthy looking ulcer, which has healed kindly and is now about well. What could have caused it I am unable to divine, but it was evidently a genuine blister on a healthy surface. Could it have been caused by a local contraction of the womb? This amnion contained very little water.

Dardanelle, Ark.

*Arkansas Medical Monthly*

Vol. 1 No. 1 April, 1880 pp. 46-47

Hot Springs used to be visited mainly on account of syphilitic diseases; so much so, that if any one was seen there it was taken as *prima facie* evidence that he had contracted a syphilis, or what is known at Hot Springs as 'old rahl.' So universal was this opinion that it was nonsense for a visitor to deny the 'soft impeachment.' But now we find quite a large proportion of the visitors suffering from other diseases.

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The old Hale Bath House has been torn down and a handsome one erected in its place. The tubs (20 in number) are of slate. The vapors are well arranged. A mud-hole has been constructed in imitation of the natural baths on the mountain, formerly known as the 'Rahl and Mud-hole' — one for each of the sexes. The ladies mud bath is cozily arranged, and a shower is at hand for the purpose of cleansing the body after coming out of the bath. The mud-bath pool for the gentlemen is deep enough and large enough to swim in. The mud-baths are a new feature in Hot Springs bath houses, and so are the slate tubs. An office and two parlors are attached. The attendants are all dressed in livery.

*Arkansas Medical Monthly*

Vol. 1 No. 3 June, 1880 pp. 130-131

**Editorial**

**M. D.'s.**

**(Medical Drummers.)**

It is a mercantile custom, long required as legitimate and judicious, for wholesale dealers to employ salesmen to travel as solicitors of business in their respective interests, but it is left to the retail druggists of North America to organize the grandest system of commercial agencies ever known to the world. These soda-water squirters have secretly, but successfully, manipulated in their interest, and without expense to themselves, for many years, an organization of about eighty



thousand drummers. This hoodwinked army of perambulating apothecary clerks are known to the people of the United States as American doctors. They infest all parts of the country, but are most diligently and profitably employed in the cities, where they go from house to house and request the sick dwellers to buy medicines from certain drug stores. These patients give their last half dollar for one cent's worth of medicine in four ounces of distilled (rain) water, while the doctor (so-called) charges his fee for visit and prescription, which he seldom collects,—his only remuneration being the privilege he enjoys, while off duty, of sitting in the back room of drug stores, chewing his own tobacco, spitting on the stove and being sociable with his employer. Some druggists are said to enjoy a monopoly of drummers, by paying a certain per cent, as commission on sales effected by them. This is better than working for nothing, as others do, but it is taking undue advantage of those who respect the *code* which prohibits, in spirit, such contracts. Prescriptions written in characters only understood by certain druggists is a violation of the same law,

but *sometimes* indulged in by "leading" medical drummers. For God's sake, gentlemen, cease to prostitute your profession to such a base calling. If true physicians, quit drumming for drug stores and battle for your own interests. If you own an interest in any of these establishments, let it be known, throw up your diploma and rally to the soda fount. Give others a chance who are struggling single-handed under known principles for such reward as his merit might command, but for your demoralizing influences. All over the universe drugs are sold for cash, while medical advice is charged; druggists are growing rich and doctors poorer! The doctor writes a prescription, for which he *charges* two dollars; the druggist compounds it perhaps a dozen times, and gets each time his five hundred per cent. in cash. . . . What is to be done to correct this affliction? Buy and dispense our own medicines is the answer. Homeopathic patronage is largely influenced in this manner in the cities. The fact is evident, because this practice meets with no encouragement in the country, where physicians all carry and dispense their own remedies.



## MEDICINE IN THE NEWS



### THE MONTH IN WASHINGTON

The Senate Finance Committee continues to forge ahead with its consideration of a catastrophic national health insurance proposal with Chairman Russell Long (D-LA) determined to secure a favorable vote.

However, the shadow of the budget-balancing imperative has made committee members cautious about actions that would increase federal spending next year. As a consequence, committee approval of a NHI bill, while a giant step forward, would leave NHI still a long way from adoption by Congress, the formidable hurdles of Senate approval and action by the so-far disinterested House standing in the way.

A majority of witnesses appearing before the Senate Finance subcommittee on Health have endorsed the spurring of competition in the health care field, but most expressed some reservations about the so-called "pro-competition" measure before the panel.

Lowell Steen, M.D., Board Chairman of the American Medical Association, said the AMA supports the principle of increased competition through multiple insurance options for employees. However, Dr. Steen cautioned that "any legislation embodying such principles must also carry sufficient safeguards to protect the purchaser . . . also we must never let quality be sacrificed to cost considerations."

The pro-competition proposals bring new considerations to the debate over national health insurance, Dr. Steen noted. "The goal of this legislation is to lower national expenditure for health care by assuring options of coverage to employees under employer health plans . . ." The current tax deduction for premium purchase and for individual medical expense costs would be sharply curtailed under these proposals in an effort to force employers and individuals to seek lower cost plans, including health maintenance organizations.

Dr. Steen said the vast majority are protected by health insurance, but there are some who through no fault of their own cannot obtain the coverage they need. "These new proposals (pro-competition) are not designed to deal with this problem, and in some ways . . . may even exacerbate it," he told the subcommittee.

The present tax relief for employee health insurance benefits has been spectacularly successful in encouraging health insurance, he noted.

He said changes that should be made in the private insurance system that would go a long way to close the gaps in coverage include minimum standards of adequate benefits, with appropriate deductible and co-insurance; a simple system of uniform benefits by federal, state and local governments for those unable to provide for their own medical care; and the purchase of private catastrophic coverage.

"A nationwide program could be instituted by the private industry (and government if necessary for reinsurance) to make available catastrophic coverage to protect against the impact of a costly illness that could be economically devastating. We call upon the committee to consider these points when reviewing any health insurance proposal."

Referring to the bill before the subcommittee, sponsored by Sen. Dave Durenberger (R-MN), Dr. Steen said the bill contains no mandate that the employer provide any insurance, and the employee's participation in any plan would be voluntary.

"The AMA supports competition in the delivery of medical services," said Dr. Steen. "Competition at its best can raise the quality of care and reduce the costs of providing that care. Such

competition is promoted in the Durenberger Bill in the requirement of multi-plan options, but there are also limiting conditions . . ."

One problem is that current law already requires the option of comprehensive benefits provided by an HMO. Since there would be no corresponding broad coverage requirement for conventional insurance in the bill, competition could suffer, according to Dr. Steen.

Dr. Steen pointed out that the concept of increased competition through limitation on the tax exclusion by employees with respect to employer-paid premium and a system of cash rebates for low-cost plan selection was contained in a recommendation of the National Commission on the Cost of Medical Care — a recommendation that has received AMA approval.

"However, we have reservations about a program that might encourage the individual to acquire less coverage than is desirable," said Dr. Steen.

\* \* \* \*

Government support for medical education is needed to bridge the gap between the limits of private resources and the costs of medical education, the AMA has told Congress.

Noting that legislation has been introduced to eliminate capitation grants for medical schools, the AMA said such aid "has been a valuable investment of public funds to improve the quality and availability of medical education." Medical schools use these funds according to their specific needs and the needs of their communities, the AMA noted.

C. William Ruhe, M.D., Senior Vice President of the AMA, testifying on the opening health manpower hearings of Congress before the Senate the loss of general institutional support would cause schools to seek other sources of funds, possibly through tuition increases, and harm the quality and availability of medical education.

In addition to general support, special project grants serve to influence directions in medical education, Dr. Ruhe said. "With special project grants each institution may judge whether it can and should participate, based on factors such as curriculum strengthening, community needs, as well as other factors," he said.



The AMA official endorsed a system of government guaranteed loans, along with interest subsidies, as the most effective means of generating funds for modernization of schools from private money markets.

The AMA also supported special assistance for schools with financial problems that threaten the quality of their programs and their continued operation. "Such assistance, however, should not become a permanent crutch for faltering schools," Dr. Ruhe said. "Rather, it should be geared to overcoming immediate financial hurdles and lead to financial stability."

On the question of student aid, "We are deeply concerned by the financial pressures placed on students, and we firmly believe that access to medical education must not be allowed to become limited on the basis of income," Dr. Ruhe testified.

He noted that the AMA, through its foundation, operates its own loan guarantee program for medical students and resident physicians. Since the inception of this program in 1962, more than \$95 million in loans have been guaranteed.

"Our resources, however, are not sufficient to meet an ever growing demand in the face of rising tuition costs," Dr. Ruhe said. "It is essential that government at all levels take steps to assure students continued access to adequate resources.

"Student assistance must be of the highest priority for government action . . . effective mechanism for government participation is a program of guaranteed loans," Dr. Ruhe said. Such a guarantee serves to minimize the strain on government resources and also enhances the ability of students and newly licensed physicians "to make intelligent career choices according to their interests and capabilities," the AMA official said.

Dr. Ruhe said the AMA also supports other aid. For example, contractual service arrangements (between students and resident physicians and organizations such as the armed forces or other governmental services) are one option. Scholarships for exceptional students should be encouraged. And, financial grants-in-aid, without obligations for repayment, should be available for economically disadvantaged students. "We encourage both the states and the federal government to make these kinds of options avail-

able so that students can make choices according to their needs and abilities," Dr. Ruhe said.

New physicians should be free to choose to repay a government loan directly, or to participate in a program of service in some needed area in lieu of payment, Dr. Ruhe testified.

The AMA supported the continuation of the National Health Service Corps "as a beneficial method of providing medical services in underserved areas."

The AMA also endorsed continued federal assistance to programs of basic nurse training, adding that federal assistance should be provided to the training institution as well as to the student.

\* \* \* \*

President Carter has vetoed legislation increasing the pay and benefits of military physicians and other health professionals.

In a message to Congress, Carter said he wanted to reiterate his "commitment to alleviate the shortage of physicians in the armed forces" and urged the lawmakers to tailor the legislation "in a fiscally responsible manner."

He said expansion of the law covering military physicians' pay would increase federal spending by some \$170 million for the years through 1985.

Under the bill, which had been approved only a week before by Congress, a military physician could have earned as much as \$71,000 a year.

The pay system in the bill authorized bonuses for physicians who became Board Certified in medical specialties. This was singled out for criticism by President Carter.

Other reasons for the Carter veto: the bill should not have included Public Health Service Commissioned Corps and should not have covered non-physicians.

Sen. Hart (D-CO) has introduced legislation aimed at meeting President Carter's objections to the military physician pay bonus bill.

Similar legislation is being offered in the House. Hart, a member of the Senate Armed Services Committee, said quick action is needed in order to preserve the military medical corps.

\* \* \* \*

The AMA and other partners in the Voluntary Effort to contain health care costs have warned President Carter against pushing his long-stalled hospital cost containment bill.

James Sammons, M.D., Executive Vice President of the AMA, told reporters following the White House meeting that he finds it "very hard to understand" why Carter opposes mandatory wage-price controls but favors hospital cost-constraints.

"In 1978 and 1979 doctors' fees have increased at a lower rate than the Consumer Price Index," Sammons said. "That says to us we're doing it voluntarily."

However, the White House rejected the advice. "We will continue to press for hospital cost containment," said White House Press Secretary Jody Powell. "If you just look at health costs over the past several months, that is an important area to which inflation has spread."

The cost containment bill was watered down into a voluntary program in the House last year and never made it to the Senate floor.

\* \* \* \*

Undaunted by hostile congressional actions, Federal Trade Commission Chairman Michael Pertschuk says he plans to continue investigations of physician activities.

He has told a House Appropriations subcommittee the FTC will focus on "concerted actions" by health providers who "may seek to obstruct cost-containment programs." He mentioned possible boycotts of health maintenance organizations, and possible "price fixing conspiracies and boycotts designed to thwart insurers' cost-containment programs." Pertschuk also said the FTC will continue to keep its eye on the relationships between physician groups and Blue Shield.

The Senate failed by only a few votes recently to exempt physicians from FTC jurisdiction. Congress has been holding up FTC appropriations and the agency faces the need for long-term funding in order to keep operating.

\* \* \* \*

HEW Secretary Patricia Harris is upset at the length of time it takes the Food and Drug Administration to process final drug determination.

She told a House Commerce Subcommittee that "nothing has frustrated me as much in the past seven months as trying to get a handle on the time-frame at FDA."

"It's clear I'm going to have to take over some of the administration myself," Harris added. "I asked FDA why it has taken five years (to finalize regulations denying reimbursement for ineffective and possibly defective drugs) and they have not answered me."

The HEW Secretary said she is assigning a personal staff member to speed things up at the FDA.

\* \* \* \*

The House Government Operations Committee has approved the Federal Privacy of Medical Information Act, restricting the release of medical information and allowing patients to examine their own records in institutions. The committee vote was 26-7.

Six dissenting Republicans said that health care ought to be regulated by the states. They questioned whether there were sufficient abuses that made the legislation necessary. A vote is expected this spring by the House. Similar legislation is before the Governmental Affairs Committee in the Senate.

Under the bill, patients in a federally supported institution or facility would have the right to inspect records about themselves and seek corrections, if necessary. Penalties are provided for improper release of patient information. The bill does not cover the offices of individual physicians.

\* \* \* \*

The Health, Education and Welfare Department, abbreviated as HEW all these years, adopts a new name officially on May 7 — the Department of Health and Human Services (HHS). That's the date the new Department of Education is launched, stripping the "E" out of the HEW. The HHS acronym unfortunately looks a lot like the other acronyms that abound at the HEW Department, especially the HSA of the Health Services Administration. HEW was almost christened the Welfare Department at its inception in the early 1950s, but the late Sen. Robert Taft (R-OH) balked at the implication of a welfare state.

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#### **INFIRMARY DEDICATED TO DR. SHUFFIELD**

During the extended session of the State Legislature in January 1980, a Senate Concurrent Resolution authorized the dedication of the medical consultation room at the State Capitol as the H. Elvin Shuffield Infirmary. The Legislature recognized Dr. Shuffield's long service to medicine, to the Legislature, and to the public in naming the infirmary in his honor. Dr. Shuffield served as Chairman of the Legislative Committee of the Society for twenty-one years. He was the medical liaison for the members of the Legislature, he coordinated the "Doctor of the Day" program at the Legislature, and he often provided medical care himself when at the Legislature.

The Infirmary was formally dedicated on April 16, 1980. Senator Max Howell, Chairman of the Senate Efficiency Committee, Senator Jim Holsted, and Senator Morriss Henry were present representing the State Legislature. A. E. Andrews, president of the Arkansas Medical Society, James Weber, Chairman of the Society Legislative Committee, Legislative Counsel Michael Mitchell, and C. C. Long and Ken LaMastus of the Society staff were present for the dedication.

#### **Medical Practices Act**

Now Available. Revised edition of the Medical Practices Act and all Rules and Regulations

promulgated by the Arkansas State Medical Board. Published in loose leaf binder form and available from the Arkansas State Medical Board at a price of \$5.50 postpaid. Future changes in the Medical Practices Act and any additional rules and regulations will be available in loose-leaf form. Send request to Dr. Joe Verser, Secretary, Arkansas State Medical Board, Post Office Box 102, Harrisburg, Arkansas 72432, and make your check payable to the Arkansas State Medical Board.

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#### **PERSONAL AND NEWS ITEMS**

##### **Councilor to Southern Medical Association**

Dr. L. K. Austin of Monticello has been appointed to serve a five-year term as Councilor from Arkansas on the Council of the Southern Medical Association. Dr. Austin was appointed by Dr. G. Baker Hubbard, Sr., president of the SMA.

##### **Physician Portraits Hung**

The Logan County Museum Association, located in Paris, held an open house on April 20 to honor the "Smith Doctors". Portraits of Doctors Jim Smith, Mac Smith, John Smith, Charles Smith and James T. Smith were presented to the museum for permanent display. Dr. James T. Smith of Paris presented medical articles for display and answered questions during the ceremonies.

### **Cancer Symposium**

Participants in an April Cancer Symposium in Russellville included: Russellville Doctors Robert Bell (cancers peculiar to men), Donald Dunn (cancers peculiar to women), Joe Crumpler, Jr. (cancers of the colon and related areas), Nathan Austin (cancers of ear, nose and throat), and Dr. Kent Westbrook of Little Rock (breast cancer). Dr. Stanley D. Tetter of Russellville served as adviser.

### **Golden Apple Award**

Dr. Leo Davenport of Fort Smith was among those receiving Golden Apple awards from the Fort Smith Classroom Teachers Association in April. Dr. Davenport was honored for his work with the Berkley project, a program of instruction in anatomy for fourth through seventh grade students.

### **New Clinic in Hope**

An open house was held on April 6th at The Hope Doctors' Clinic. The clinic will house the offices of Drs. George Wright, family physician, and George Garrett, Jr., obstetrician-gynecologist.

### **School Board President Elected**

Dr. Hunter M. Steadman of Eureka Springs has been elected President of the Eureka Springs School Board. He has served as Board Member for the past two years.

### **Physician Locates**

Dr. Thomas J. McHattie, an obstetrician-gynecologist, has joined Drs. Kevin Crowley and Henry Edwards at their clinic in Van Buren.

### **Dr. Saltzman Honored**

Dr. Ben N. Saltzman of Little Rock is the recipient of the 1980 National Human Relations Award given by the Arkansas Council on Brotherhood of the National Conference of Christians and Jews. The award was presented to Dr. Saltzman for his dedication of countless hours of time and energy to many varied community, state, and international projects and programs which have promoted good human relations and true patriotism.

### **Air Force Award**

Dr. W. John Giller of El Dorado has been chosen Outstanding Reserve Aerospace Medicine Physician of the year by the 10th Air Force. Dr. Giller, commander of the 917th Tactical Clinic at Barksdale Air Force Base in Louisiana, is now qualified for consideration as the top aerospace officer in the U. S. Air Force Reserves.

### **Physician Speaks to Business Club**

Dr. Cynthia Netherton of Clinton was guest

speaker at the annual Career Dinner of Clinton Business and Professional Women's Club in April.

### **Dr. Chock Speaks**

Dr. Daniel Chock, director of the Community Dialysis Center in Mountain Home, discussed a new program, Continuous Ambulatory Peritoneal Dialysis, and the development of dialysis at a recent meeting of the Baxter General Hospital Auxiliary.

### **Rotary Speaker**

Guest speaker for the April 14th meeting of the Marianna Rotary Club was Dr. Ben Saltzman.

### **Little Rock Physician Honored**

Dr. Joseph D. Calhoun became president of the American Roentgen Ray Society at its recent annual scientific meeting in Las Vegas.

### **Physician Elected to Board**

Dr. Peter Irwin of Fort Smith was one of four recently elected to the Board of Trustees of Sparks Regional Medical Center in Fort Smith.

### **Knee Injuries**

Dr. D. Bud Dickson spoke on the prevention, treatment and rehabilitation of knee injuries during a meeting at Arkansas Tech in April. During his talk, he told of the Cybex machine and its use in rehabilitation work.

### **Crawford County Gains Physician**

Dr. A. L. Travis, formerly of Canada, has joined Dr. Kenneth Stone for the practice of medicine in Van Buren.

### **Health Fair**

Dr. J. J. Magie of Conway recently participated in an Older Americans Health Fair '80 sponsored by the Faulkner County Council on Aging and the Central Arkansas Area Agency on Aging. A wide variety of health screening tests and information were offered to persons over the age of 55 during the fair.

### **New Medical Center in Pocahontas**

Open house was recently held at the new Randolph County Medical Center in Pocahontas. Dr. Ramon Lopez, an Orthopaedic Surgeon from Newport, joins the staff of the new medical center. Drs. Joe T. Wilson, Jr., and John Smoot of Jonesboro were present for the dedication ceremonies.

### **Perinatal Adolescent Conference**

Dr. Mose Smith, Director of Little Rock Pregnancy and Counseling Service, recently participated in a Perinatal Adolescent Conference held at Indian Rock Resort, Fairfield Bay. The theme of the conference was "Teen Pregnancy in Arkansas."



# keeping up

## Category 1 Continuing Medical Education Programs Available in Arkansas

### AGING CONFERENCE

Presented by Vicki Schmall, Gerontology Specialist, *July 29th, 8:00 A.M. to 4:00 P.M.*, VA Medical Center, Fayetteville (for further information contact VAMC, Fayetteville).

### AMERICAN COLLEGE OF PHYSICIANS — MKSAP REVIEW COURSE

Presented by Peter O. Kohler, M.D., *August 25-28, 8:00 A.M. to 5:00 P.M.*, Hilton Inn, Little Rock. Thirty hours Category I credit. Registration fee: ACP Associates, \$100; ACP Members, FACP, Residents and Research Fellows, \$200; Non-members, \$300.

### RECURRING EDUCATION PROGRAMS

Unless otherwise indicated, programs are for one to one and one-half hours Category I credit.

#### FAYETTEVILLE — AHEC-NW

*Medicine Teaching Conference*, 7:30 A.M. each Saturday, Washington Regional Medical Center.

#### FAYETTEVILLE — VA MEDICAL CENTER

*Radiology Conference*, July 1st and 16th and August 5th and 20th, 3:00 P.M., Conference Room.

*Pathology Conference*, July 15th and August 19th, 3:00 P.M., Conference Room.

*Mortality Conference*, July 10th and August 14th, 3:00 P.M., Conference Room.

*Endocrinology Conference*, July (check for date and time).

*Pulmonary Conference*, August (check for date and time).

#### FORT SMITH — AHEC

*Tumor Conference*, every Tuesday, 12:00 noon, Fourth Floor Conference Room, Sparks Regional Medical Center.

#### JONESBORO — ST. BERNARDS REGIONAL MEDICAL CENTER

*Interesting Cases*, second and fourth Tuesday, 12:00 noon, Dietary Conference Room. Sponsored by AHEC-NE.

*Tumor Conference*, third Tuesday, 12:00 noon, Dietary Conference Room. Sponsored by AHEC-NE.

*Medical Lecture Series*, each Friday except third Friday, 11:50 A.M., Dietary Conference Room. Sponsored by AHEC-NE.

*Chest Conference*, third Friday, 11:50 A.M., Dietary Conference Room. Sponsored by AHEC-NE.

#### LITTLE ROCK — BAPTIST MEDICAL CENTER

*Pulmonary Care Conference*, each Tuesday, 12:00 Noon to 1:00 P.M., Dining Room #1.

*Central Arkansas Primary Care Conference*, second Tuesday, 7:00 P.M. to 9:00 P.M., Auditorium. Two hours Category I credit.

*Cardiopulmonary Resuscitation Course*, second Wednesday, 6:00 P.M. to midnight. Human Resource Development Area. Six hours Category I credit.

*Emergency Room Medicine Conference*, second and fourth Wednesday, 12:00 noon to 1:00 P.M. Conference Room #1.

*Morbidity and Mortality Conference*, first Thursday, 8:00 A.M. to 9:00 A.M. Conference Room #1.

*Surgery Conference*, each Thursday except first Thursday, 8:00 A.M. to 9:00 A.M., Conference Room #1.

#### LITTLE ROCK — ST. VINCENT INFIRMARY

*Interhospital GI Problems Conference*, first Monday, 6:00 P.M. to 7:30 P.M., Room E155, Education Wing.

*Peripheral Vascular Disease Conference*, second Monday, 6:00 P.M. to 7:00 P.M., Room E155, Education Wing.

*Pediatric Conference*, first and third Monday, 12:30 P.M. to 1:30 P.M., Room E159, Education Wing.

*Interhospital Urology Grand Rounds*, first Monday, 5:30 P.M. to 6:30 P.M., Room E159, Education Wing.

*Neuropathy Conference*, third Tuesday, 5:00 P.M. to 6:00 P.M., Room S1169, Laboratory.

*Pulmonary Conference*, first and third Thursday, 12:00 noon to 1:00 P.M., Room E159, Education Wing.

#### LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

*Internal Medicine Grand Rounds*, each Tuesday, 8:00 A.M. to 9:00 A.M., Education I Auditorium.

#### POCAHONTAS

*Medical Lecture Series*, third Tuesday in August, 7:30 P.M., Randolph County Hospital. Sponsored by AHEC-NE.

#### WALNUT RIDGE

*Medical Lecture Series*, third Tuesday in July, 7:30 P.M., Lawrence Memorial Hospital. Sponsored by AHEC-NE.

As organizations accredited for continuing medical education by the Liaison Committee on Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.



## NEW MEMBERS

Boone County Medical Society has added three members to its roll:

### **Dr. Charles R. Klepper**

Dr. Charles Klepper was born in Harrison on December 16, 1949.

Dr. Klepper is a graduate of Hendrix College and was granted his medical degree from the University of Arkansas College of Medicine in 1975. His internship and residency were at the University of Missouri Medical Center.

Dr. Klepper, an Internist, has practiced in Harrison for two years. His office is at 220 North Walnut.

### **Dr. John H. Marsh**

Dr. John Marsh is a native of Maud, Oklahoma. He was born on July 18, 1936.

After attending Hendrix College and Oklahoma State University, Dr. Marsh received his M.D. from the University of Oklahoma School of Medicine in 1963. His internship was at St. John's Hospital in Tulsa, Oklahoma. Before entering residency training, Dr. Marsh served with the United States Army for two years.

Dr. Marsh served residencies in Internal Medicine at St. John's in Tulsa, Pediatrics at St. John's and Hillcrest Medical Center in Tulsa, and Pathology at Hillcrest.

He practiced at the Family Planning Clinic in Tulsa for two years, and was Emergency Physician in Sapulpa and Okmulgee from 1975 to 1978. In 1978 and 1979 he was in Family Practice in Sapulpa as well as Emergency Physician and also did some Emergency Medicine in McAlester and Muskogee.

Dr. Marsh now practices Emergency Medicine at 620 North Willow in Harrison.

Two physicians have recently joined Garland County Medical Society:

### **Dr. Haynes G. Jackson, Jr.**

Dr. Haynes G. Jackson, Jr. was born on September 30, 1944, in Hot Springs.

Dr. Jackson was graduated from Southwestern at Memphis with a B.A. in 1967 and from Memphis State with an M.S. in 1969. He was granted his M.D. from the University of Arkansas College of Medicine in 1974. His internship and residency were served at the same institution. Dr. Jackson held a teaching appointment at the University of Arkansas Medical Center for one year.

Dr. Jackson now practices Obstetrics and Gynecology at 505 West Grand, Suite 311, Hot Springs.

### **Dr. Philip A. Woodward**

Born on January 24, 1946, Dr. Philip Woodward is a native of Austin, Minnesota.

Dr. Woodward received his pre-med education at Grinnell College, Iowa. His medical degree was awarded by the University of Iowa College of Medicine in 1972. An internship at Memorial Hospital in Johnstown, Pennsylvania, preceded two years of service with the Air Force. From 1975 to 1979, Dr. Woodward served a residency at Kansas University Medical Center in Kansas City.

Dr. Woodward, a Urologist, practices at 903 West Grand in Hot Springs.

Jefferson County Medical Society has added two to its membership roll:

### **Dr. Siva P. Kaipa**

A native of India, Dr. Siva Kaipa attended Government Arts College in India. He was born July 1, 1949.

Dr. Kaipa was graduated from Kurnool Medical College Tiraipati University, Kurnool, Andhra, India, with an M.D. in 1973. He served an internship at Cook County Hospital in Chicago, Illinois, and a residency at Providence Hospital in Southfield, Michigan.

Before moving to Pine Bluff, Dr. Kaipa practiced in Decatur, Alabama.

Dr. Kaipa now practices Obstetrics-Gynecology at 1708 Doctors Drive in Pine Bluff and holds a teaching position with AHEC in Pine Bluff.

### **Dr. Lloyd Young**

A native of Cleveland, Ohio, Dr. Lloyd Young was born May 6, 1926.

Dr. Young's pre-med education was at Ohio State University in Columbus and Washington Missionary College in Washington, D. C. He was granted a medical degree by Medical College of Virginia Health Sciences Division of Virginia Commonwealth University, Richmond, in 1952.

Dr. Young served a Straight Pediatric internship and residency at University Hospitals of Cleveland (Western Reserve University) and at



Cleveland Clinic. From 1954 to 1956, he served as a Pediatric Fellow and staff member at Cleveland Clinic. He was in Pediatric practice in Fort Pierce, Florida, from 1956 until 1963.

In 1963, Dr. Young entered a General Psychiatry residency at University of California San Francisco Medical Center (Langley Porter Institute) and in 1965, a Child Psychiatry residency at University of California, San Francisco. Dr. Young then moved to Little Rock where he was an Assistant Professor of Psychiatry and Pediatrics at the University of Arkansas Medical Center from 1967 to 1970. In 1970, he joined the Arkansas State Hospital in Little Rock as a Staff Child Psychiatrist. He returned to Florida in 1973 and served as a Staff Child Psychiatrist with Hillsborough Community Mental Health Center and as Assistant Professor of Psychiatry at the University of South Florida School of Medicine in Tampa.

Dr. Young now practices Psychiatry at the Southeast Arkansas Mental Health Center, 2500 Rike Drive, in Pine Bluff. He is board certified.

#### **Dr. George L. Bohmfalk**

A new member of Miller County Medical Society, Dr. George Bohmfalk was born July 13, 1947, in Temple, Texas.

Dr. Bohmfalk received a Bachelor of Science (Biology) at Tulane University, New Orleans, in June of 1969. In 1973, he was granted a medical degree by the University of Texas Medical School in San Antonio. His internship in Surgery was at Vanderbilt University in Nashville, Tennessee. He returned to Texas to serve a Neurosurgery residency at the University of Texas Health Science Center at San Antonio Teaching Hospitals from 1974 to 1979. At the same institution, he served as clinical instructor, consulting status, for the Division of Neurosurgery.

Dr. Bohmfalk practices Neurosurgery at 1001 Main in Texarkana, Texas.

Pulaski County Medical Society has added six regular members and three courtesy members to its roll:

#### **Dr. Larry G. Barnes**

Dr. Larry Barnes, a native of Joplin, Missouri, was born on January 10, 1948.

Dr. Barnes attended the University of Missouri at Columbia. In 1974, he was graduated from Tulane University School of Medicine in New Orleans. His internship and Internal Medicine

residency were at Charity Hospital in New Orleans. From 1977 to 1979, he practiced with Sale Memorial Hospital and Clinic in Neosho, Missouri.

A Board Certified Internist, Dr. Barnes practices in the Doctors Building, Suite 618, at 500 South University in Little Rock.

#### **Dr. Robert E. Casali**

Dr. Robert Casali was born in Lake Village November 25, 1940.

In 1961, he was graduated from Arkansas A & M College at Monticello with a B.S. Dr. Casali was granted his M.D. by the University of Arkansas College of Medicine in 1965. His internship was served at the University of Texas Southwestern Medical School in Dallas. From 1966 to 1971, he was a resident at the University of Arkansas College of Medicine. He was a chief resident in 1970-1971.

Dr. Casali's specialty is Vascular Surgery. He is an Assistant Professor of Surgery at the University of Arkansas College of Medicine.

#### **Dr. Michael L. Glidden**

Dr. Michael Glidden was born on May 3, 1945, in Orange, Texas. His pre-med education was at Lamar University in Beaumont, Texas. The University of Texas Southwestern Medical School in Dallas granted Dr. Glidden his medical degree in 1972.

Dr. Glidden's internship was at the United States Naval Hospital in Camp Pendleton, California. An Anesthesiology residency followed at the U. S. Naval Hospital in San Diego.

Dr. Glidden is a Fellow of the American Board of Anesthesiology and is a member of the American Society of Anesthesiologists and the Arkansas Society of Anesthesiologists.

Dr. Glidden is in practice with Capitol Anesthesia Group, P.A. at 500 South University, Suite 720, in Little Rock.

#### **Dr. Andrew G. Kumpuris**

Dr. Andrew Kumpuris, a native of Little Rock, was born May 26, 1949.

A graduate of Washington and Lee in Lexington, Virginia, Dr. Kumpuris received his M.D. from Baylor College of Medicine, Houston, Texas, in 1974. His internship and residencies were with Baylor Affiliated Hospitals. From 1975 to 1977, he served an Internal Medicine residency and from 1977 to 1979, a Cardiology residency. Dr. Kumpuris is Board Certified in both.

Dr. Kumpuris practices Cardiology at 501 North University in Little Rock.

**Dr. James L. Thomas**

A native of Biloxi, Mississippi, Dr. James Thomas was born on January 11, 1943.

Dr. Thomas attended Auburn University in Alabama and Samford University in Birmingham, before receiving his M.D. from the University of Alabama School of Medicine. He served his internship and residency in Psychiatry at University of Alabama Hospitals and Clinics in Birmingham.

A diplomate of the American Board of Psychiatry and Neurology, Dr. Thomas is with the State Hospital at 4313 West Markham, Little Rock.

**Dr. S. Berry Thompson, Jr.**

Dr. S. Berry Thompson, Jr., was born June 19, 1949, in Little Rock. He was graduated with a B.A. in 1971 from Tulane University. In 1975, the University of Arkansas College of Medicine granted him an M.D. degree.

His internship and a residency in Orthopaedic Surgery were served at the University Hospital in Little Rock. Dr. Thompson served a Fellowship in Orthopaedic Reconstructive Surgery at Mayo Clinic in Rochester, Minnesota, and a Fellowship in Hand Surgery at the University of Arkansas College of Medicine.

Dr. Thompson practices Orthopaedic Surgery at 1100 North University in Little Rock.

**Courtesy Members**

**Dr. Phillip R. Alston**

Dr. Phillip Alston is an Obstetric-Gynecology resident at the University of Arkansas College of Medicine. He is a graduate of the University of Arkansas College of Medicine.

**Dr. Luis Francisco Ardon**

Dr. Luis Ardon is a resident of Internal Medicine at the University of Arkansas College of Medicine. He received his M.D. degree at the University of Bologna, Italy.

**Dr. John M. Tune**

Dr. John Tune is a Fellow of Gastroenterology at the University of Arkansas College of Medicine. He was graduated from the University of Texas Medical Branch at Galveston.

Sebastian County Medical Society has added two new members to its roll:

**Dr. M. Louis Poole**

Dr. Louis Poole was born in El Dorado on November 27, 1948.

Dr. Poole was granted a B.S. from the University of Arkansas in 1971 and an M.D. from the College of Medicine in 1975. His internship was at University Hospital and St. Vincent Infirmary. From 1976 to 1979, he was in residency at Washington University and Barnes Hospital in St. Louis, Missouri.

Dr. Poole practices Obstetrics-Gynecology at 2704 Barry in Fort Smith.

**Dr. Rowland P. Vernon, Jr.**

A graduate of Louisiana Polytechnic Institute, Dr. Rowland Vernon was born in Ruston, Louisiana, January 13, 1944.

Dr. Vernon received his medical degree in 1970 from Vanderbilt University School of Medicine. His internship and residency were at Vanderbilt University Affiliated Hospitals from 1970 to 1977.

Dr. Vernon served two years of active duty with the United States Navy Reserve as a Lieutenant Commander in the Medical Corps.

A board certified Thoracic and Cardiovascular Surgeon, Dr. Vernon practices at Holt-Krock Clinic, 1500 Dodson Avenue, in Fort Smith.

**Dr. Terrald J. Smith**

Dr. Terrald Smith is a resident member of the Sebastian County Medical Society.

A native of Hinton, Oklahoma, Dr. Terrald Smith was born November 19, 1947. He served as a combat medic with the United States Army from 1968 to 1969.

Dr. Smith received a B.S. at Central State University in Oklahoma and an M.S. at Oklahoma State University. In 1979, he was awarded an M.D. from University of Oklahoma School of Medicine, Oklahoma City.

Dr. Smith is a resident of Family Practice with AHEC at 100 South 14th Street in Fort Smith.

**Dr. Victor M. Rodriguez**

Dr. Victor Rodriguez was born May 17, 1945, in Ponce, Puerto Rico. He is a new member of the Union County Medical Society.

Dr. Rodriguez received a B.S. from the University of Puerto Rico in 1968. His medical degree was received from the University of Puerto Rico School of Medicine in 1972. After serving a rotating internship of Internal Medicine and



Obstetrics-Gynecology at University District Hospital in San Juan. Dr. Rodriguez served a three year Obstetrics-Gynecology residency at the same institution. While in San Juan, he was a lecturer of General Zoology at the Interamerican University.

Dr. Rodriguez served a three-year duty at Maxwell Air Force Base, Alabama, as a Major in the United States Air Force Medical Corp.

An Obstetrician-Gynecologist, Dr. Rodriguez has his practice at 700 West Faulkner in El Dorado.



## OBITUARY

### Dr. James W. Freeland, Sr.

Dr. James W. Freeland, Sr. of Star City died April 24, 1980. Dr. Freeland was born in Ivan, Arkansas, on December 2, 1924.

He received his medical degree from the University of Tennessee School of Medicine and served an internship at Philadelphia Naval Hospital in Pennsylvania. He had practiced in Star City for twenty-six years. He was a Mason and a Shriner.

Dr. Freeland is survived by his wife, Mrs. Barbara Ann Casey Freeland, his son, Dr. Randall Hundley of Nashville, Tennessee, another son and three daughters.

### Dr. E. J. Chaffin

Dr. E. J. Chaffin of Hughes died April 11, 1980. He was born on July 20, 1887, in Eastman, Mississippi. He had practiced medicine for sixty-four years at Hughes.

Dr. Chaffin was a member of the Fifty Year Clubs of the University of Tennessee Medical School and the Arkansas Medical Society. He was an active Rotarian, 32nd degree Mason, a founder of the Hughes United Methodist Church, and a director of the Planters National Bank at Hughes.

Dr. Chaffin is survived by a son and a daughter.

### Dr. C. Frank Dodson

Dr. C. Frank Dodson, Jr. of Little Rock died on April 26. He was born in Nashville, Tennessee, on June 3, 1944.

Dr. Dodson practiced at the Little Rock Orthopaedic Clinic. He was a member of the Arkansas Orthopaedic Society, Mid-Central States Orthopaedic Society, and the American Academy of Orthopaedic Surgeons.

Dr. Dodson was a graduate of Vanderbilt University and the University of Tennessee College of Medicine. He served as a medical officer during the Vietnam War.

Dr. Dodson is survived by his wife, Mrs. Susan Suddeth Dodson, and one daughter.



## THINGS



TO

COME

### July 31 - August 2, 1980

*Arkansas Academy of Family Physicians* will have its thirty-third annual scientific assembly at the Camelot Inn-Convention Center in Little Rock. For further information, contact Mrs. Alta Good, Executive Secretary, Post Office Box 5721 Brady Station, Little Rock 72215, phone 227-4633.

### February 26 - March 1, 1981

*Pediatric Dermatology Seminar VIII* — The Eighth Annual Pediatric Dermatology Seminar will meet at the Eden Roc Hotel, Miami Beach, Florida. For information contact: Guinter Kahn, M.D., 16800 N.W. 2nd Avenue, Miami, Florida 33169, phone (305) 652-8600.



July, 1980

# THE JOURNAL OF THE *L*Arkansas MEDICAL SOCIETY

Vol. 77 No. 2

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## The Arkansas Model: Statewide Cooperation\*

Ben N. Saltzman, M.D.\*\*

The Rural Health Movement began in Arkansas in 1946 at the end of World War II. At that time the president of the Arkansas Medical Society recommended in an address to the delegates that a committee be appointed from the society to work with the State Board of Health for the betterment of rural health. That was the year I began my practice in Arkansas and joined the society. He stated, "This is a phase of our work that has been too long neglected. This is not essentially the physicians' whole responsibility, but with cooperation with women's organizations, civic clubs, etc., it can bring about better services." In 1947 after attending the AMA's National Conference on Rural Health, held in Chicago, the chairman of the Committee on Rural Health recommended that we in Arkansas should:

1. Improve the small town hospital.
2. Advocate and support in every way possible the building of better rural roads.
3. Develop a voluntary prepayment medical plan.
4. Expand public health services and public health education.
5. Improve rural nursing care.
6. Provide positive action in improving the medical care of the black population.
7. Expand medical education and training.
8. Promote more active participation by our society in the annual National Conference on Rural Health.

In 1948, the chairman planned a state conference in cooperation with the Cooperative Extension Service and various farm groups. Thus began a program of cooperation that expanded into the entire state and functions to the present day.

It is of interest that the proposals for rural health improvement in 1947 are just as viable

today. We have made progress but we certainly have not solved the problem. I became chairman of the Committee on Rural Health of the Arkansas Medical Society and later a member of the Council on Rural Health of the American Medical Association and also chairman. From the beginning, the same question was asked me over and over again, "How do we get doctors to practice in small towns?" In fact, this question is still No. 1 in the minds of community leaders, interested citizens, prospective patients and the medical profession. It has become so important a question that it is also No. 1 in the minds of the legislators of our country; local, state and national. Everywhere you hear possible solutions. Manufacture more doctors. Re-distribute the doctors we already have. Develop other types of health care professionals. These are all good suggestions but they do not meet with approval everywhere. Also, they will take time to develop. There is a great need right now. Our older physicians are retiring or expiring. Malpractice insurance problems are increasing the attrition rate. Anticipation of some form of National Health insurance is causing many of us to throw up our hands in expression of the futility of it all. We know that something must be done. The questions are what and how?

Arkansas has long known that the physicians most likely to practice in rural communities are the general practitioners and the family physicians. Actually, Arkansas' general practitioner rate is higher than in most states. Doctor Thomas A. Bruce, the Dean of the University of Arkansas College of Medicine, has compiled some interesting information. Arkansas is admitting 136 new medical students annually. In a few years the freshman class will hold approximately 170 annually. Contrary to popular belief, pre-med students with "C" averages often become super

\*Presented to "The Third Annual Institute Delivery of Human Services to Rural People", June 24-26, 1979, Gulf Shores, Alabama.  
\*\*University of Arkansas Medical Sciences, 4301 W. Markham, Slot 592, Little Rock, Arkansas 72201.



specialists; those with "A" averages become family doctors. We've got a lot of smart family doctors. We have over 300 residents this year. The number is increasing annually. Teaching and clinical facilities are strained. We have become very selective. The grade point average for this year is 3.5 out of a possible of 4.0.

The Arkansas State Legislature enacted a program in 1949 for the expressed purpose of increasing the number of physicians practicing in rural communities in the state. This was to be accomplished by providing educational assistance to medical students, in need of financial aid to complete their program of study, and who have expressed an interest in practicing medicine in a rural community. The act was amended in 1971 to extend and strengthen the provisions of the program for the purpose of assisting greater numbers of students. The act designated a board composed of the Dean of the College of Medicine as chairman; the Chancellor; one representative of the College of Medicine named by the Dean; the president of the Arkansas Medical Society as vice chairman; and two physicians named by him. The responsibility of the board included determining the eligibility of applicants; naming the recipients of such assistance; setting the amounts of loans and generally taking administrative responsibility. The program had a slow start as many legislative programs do. There were no funds allotted until 1956. It was not until the spring of 1971 when the act was amended to strengthen the provisions of the program that funds were made available in amounts sufficient to sustain interest in rural practice and to the development of the full potential of the Arkansas Rural Medical Student Loan Scholarship program. Eligibility requirements are simple. Any resident of Arkansas who has been accepted to or is enrolled in the University of Arkansas College of Medicine in a program leading to the degree of Doctor of Medicine; who is of good moral character; in good standing in the college; in need of financial assistance to complete his program of study; and intends to practice medicine in a rural community in Arkansas of a population of less than 6,000, is eligible to receive assistance. Graduates are committed to serve in a rural community for one year for each year of the loan. If accomplished, the loan is forgiven. If this is not accomplished, the loan is repayable at the current rate of interest. Present trends indicate that the

number practicing in rural communities is increasing. The collection rates from those that have defaulted have been excellent. This year two acts were passed during the legislative session involving medical services in rural areas. They are:

1. *Act 1093* establishes a fund to make loans or grants to construct, repair, or expand medical clinics in rural, under-served communities of less than 7,500 population. Loans to physicians are not to exceed \$150,000 and community grants are not to exceed \$10,000. A total of \$400,000 was appropriated by the Legislature for this purpose. The State Health Department has been designated to receive \$200,000 and requirements and regulations concerning the remaining \$200,000 will not be prepared before July 1, 1979.
2. *Act 1094* establishes a program to make grants of \$6,000 per year for up to five years to physicians who will practice family medicine in medically under-served communities of less than 7,500 population. The amount of funds available and requirements for this program have not been determined and will not be available before July 1, 1979.

"It's been hard to even locate some young doctors to talk to," said a businessman from a small town a few days ago as he came by the medical center on a recruiting trip. This was a quotation from a statement made by Dean Bruce. Out of this discussion a plan developed that established an annual Physician's Opportunity Fair. Wednesday, October 23, 1974, was the day set aside for representatives from the towns of Arkansas that were seeking doctors to get together with medical students, interns and resident physicians who were looking for practice opportunities. Booth spaces and tables were set up for community representatives who displayed photographs, products, slide presentations, movies and brochures. Thirty-six communities represented by mayors, Chamber of Commerce officials, sheriffs, state representatives and senators, hospital and clinic administrators, physicians, local beauty queens and just plain townfolk gathered in the student union building and talked to students and housestaff for a whole day. Practically the entire medical center showed up. Even the faculty and deans of the schools of medicine, pharmacy and nursing were present. Coffee and donuts were served and everyone had a marvelous time. The medical school made no

attempt to place its graduates. Participants were asked not to discuss financial arrangements. The purpose of the Fair was simply to open up avenues for dialogue between the interested parties.

The Fair was a huge success. It served to establish rapport between community leaders and the medical center. It served to diminish the ivory tower aspects of medical education by bringing the students and faculty together with the citizens of the state on the same level. Most of the people present realized that there would be no immediate influx of physicians in the rural communities but they also realized that they could talk together and set up opportunities for future communication. The Arkansas Medical Society has operated a year-round placement service for years and was represented at the Fair, but the contacts had never before been this close.

To introduce the purpose of the Fair, a short plenary session was held in the medical center auditorium. The place was packed. The dean, the chancellor, a medical student's wife, and a staff representative from the Arkansas Medical Society spoke. I also spoke representing the Medical Society as its president and the then Chairman of the Department of Family and Community Medicine at the Medical Center. My topic was "Why I chose a Small Town and Stayed for More than 28 Years." In the talk, I outlined some of the pitfalls and many of the benefits of a small community practice. It was the consensus of those queried that this should be an annual event; and it has happened.

The University of Arkansas College of Medicine is striving to increase health manpower, particularly in the rural areas of the state. The greatest need is for family physicians who are oriented toward establishing their practices in the shortage areas. Toward this end the Area Health Education Centers program has been developed. Six communities, away from the Medical Center have established AHEC programs. Family Practice Residencies have begun in three communities. By utilizing the hospital and professional resources of the several AHEC communities as they are best suited for training purposes, it is projected that when all family practice training programs are in full operation the annual graduates will total 40. Hopefully, they will be selecting communities that relate to the rural populations of the state of Arkansas.

Basically, the AHEC program consists of an

ambulatory teaching center as a facility providing the major focus and orientation toward primary medical care for a family practice residency program. This is really a group practice clinic staffed by the residents and faculty of the program. Within the center, each resident accumulates a practice of patients and families for whom he provides services under faculty supervision. It is believed that upon completion of the program, the resident will tend to remain in the AHEC area and start his practice there, probably in association with other residents in the program. He will already have a ready-made patient following.

Medical students, too, will have the opportunity of utilizing the elective periods of their senior year in the AHEC program. In the six communities this is already taking place. It is safe to assume that these students will seek residency programs in the AHEC's. Each AHEC can handle three to four students during an elective six week period. The AHEC's include residents of certain other specialties (Primary Care) who rotate from the Medical Center, thus accomplishing a better distribution of physicians throughout the state. These residents will become better acquainted with the practicing physicians and hospitals, encouraging many of them to locate away from the metropolitan area.

The Medical Center has had an ongoing continuing education program which enables consultants to fly to all areas in the state to confer with practicing physicians and to furnish a certain amount of teaching. It serves to lessen the isolation that existed in the rural areas in the past.

Because of the success of the Physician Opportunity Fair Day the Dean has established an office for Community Medical Affairs. Its purpose is to sustain student interest in practicing in Arkansas. A permanent display has been set up in the University Hospital lobby which depicts photographs of communities which seek physicians. The display is changed as new material becomes available. Contact persons are listed so that students and housestaff can make direct inquiries. Students are taken on bus tours to communities seeking physicians so that they can see first-hand what is available. The director of the program, Bill North, has a first-name speaking acquaintance with community leadership over the entire state. In this way the College of Medicine is in constant touch. Students no longer feel that upon graduation they are tossed out of the nest to fly or perish.



A definite continuum has been established.

Many questions have confronted medical planners, administrators and teachers over the years. Why is there such a great turnover of physicians in rural areas? Are medical schools dedicated to developing sub-specialists rather than generalists? Are communities falling down on the job of retaining their physicians? Do spouses really influence the recruitment and retention of physicians? Can the College of Medicine teach students and communities what it takes to develop good rural medical practices? There are hundreds of questions that have never been answered scientifically. It is time we developed some real answers. The Dean has established an Office for Research in Medical Practice. Already all practicing physicians in the state have been contacted and base data has been obtained on a voluntary basis from all but three. Over 1,800 physicians are helping us get some real answers in Arkansas. With total sampling we will not have to make assumptions. We will find out what caused the physicians to stay and what forced them to leave. We will learn what communities should be doing. We will determine what our housestaff should be doing in preparation for practice. Facts and figures will be the most effective way of convincing the faculty. After all these men are scientists.

Medical schools all over the country are now concentrating on providing continuing education to all physicians in practice. The American Academy of Family Physicians led the way almost thirty years ago when it emphasized the importance of up-to-date medical knowledge for the satisfactory practice of medicine and as a requirement for membership. The chief benefit is to the patient. However, the latest knowledge in medicine provides the physician with self confidence and a feeling of accomplishment. It is felt that the provision of continuing education for the rural physician can do much to keep him happy in the location of his practice. Through the AHECs it is now possible to acquire extra hours of study without getting too far away from one's practice. The College of Medicine has a strong physician education program which is expanding and provides practicing physicians with an opportunity to increase their knowledge and skills and at the same time acquire credits for maintenance of academic status. It extends out to all doctors in Arkansas and encourages some to participate as

teachers in the program. At the present time I head a Rural Medical Development Program for the College of Medicine. This is an arm of the College that attempts to implement the recommendations that derive from the findings of the Office for Research in Medical Practice. The program is basically statewide in nature. The office concerns itself with many activities that strengthen rural outreach. It provides continuing education programs for Family Physicians. It coordinates the Family Practice Residency programs in the Area Health Education Centers with the Department of Family and Community Medicine in the College of Medicine. It supervises the junior and senior medical preceptorships and establishes seminars for preceptors and preceptees to insure quality control of the experience. The program cooperates with the Arkansas Medical Society in ascertaining community health needs and supplies appropriate information. The program ultimately will help Arkansas communities organize for the delivery of practical medical programs; serve in a consultant capacity to rural communities in their efforts to attract and keep physicians; and supervise, develop and promote continuing education programs for family physicians in Arkansas through the College of Medicine, the AHEC areas and the local communities.

From the beginning of the Rural Health Program in Arkansas there has been close cooperation between the Cooperative Extension Service and the Health Department, the State Medical Society and the College of Medicine. The extension service started a health education project many years ago. This included the development of an advisory committee which has been closely related to the College of Medicine. We have been responsible for the annual presentation of a State Rural Health Conference. This conference brings together community leaders, health workers, extension people and acknowledged health leaders from over the state. The conferences are of one day duration and have brought approximately 600 people to Little Rock to discuss the changing aspects of health care. The extension service has been quite effective in developing the program of work of the Office of Research in Medical Practice. The Health Department has cooperated in providing information and support from all over the state. My office has been continuously involved in the health education program of the extension service.

We have spoken to group meetings established by Extension telling of our cooperative effort and of the work plans of the College of Medicine. We have spoken to University Career Days sponsored by the Extension Service. We have had a part in speaking to the regional directors of extension programs. The Dean of the College and the associate dean for the AHEC's have been involved in training sessions for extension staff toward helping supply health manpower for rural areas. The faculty of the College of Medicine serves as a resource to health education specialists in extension in the preparation of printed materials and lecturers. I have served as trustee of a 4-H Foundation in developing a recreational complex for 4-H members. We feel that conjointly our purpose is to provide better health care for the people of our state. At the present time we are in the process of planning another State Rural Health Conference to be held in the early fall. We continue to involve the citizens in the state with health education programs. We want them to know what good health practice is. We want them to practice preventive medicine.

The College of Medicine has become very close to the hearts and minds of the citizens of the state for its efforts on their behalf. For the first time people over the entire state understand the problems of the College and sympathize with its efforts to produce high quality physicians. They are attempting to make their communities more attractive and are anxious to help with the provision of a facility that is in keeping with modern

medicine. The job of my office is one of education. It involves the process of urging physicians to form groups or associations that can serve the people of several communities and still allow time for continuing education, time for their families and time for recreation. It necessitates the promotion of better understanding on the part of community leaders. They must learn that they can be better served if groups of physicians are permitted to practice in county seats or trade centers. Communities must also understand that once a practice is established it must be patronized. The physician who is bypassed does not remain very long. Conversely his practice should not be abused by over-utilization for insignificant complaints. There is a great deal to learn from both sides, but it can be accomplished by talking together and by seeking help from those who know how to help. Medical schools and colleges are reaching out today because they realize that a rural health problem exists. *This is one accomplishment made visible after more than thirty years.* How they can be of help will depend on what research uncovers. Charles Kettering once said, "Research is an organized method of finding out what you are going to do when you can't keep on doing what you are doing now."

Hopefully, we will discover what we need to be doing differently. Meanwhile, communities and universities must communicate. Each depends upon the other for survival in our ever-more sophisticated society.





# Focal Hyperirritability of Tissues is a Clinical Fact\*\*

J. Blair Pace, M.D.\*

Over a period of six months 150 patients were seen on a referral basis with pain complaints. This includes patients with back pain, back and leg pain, neck and shoulder pain and headache.

The rationale behind viewing this group of patients in cross section is based on two assumptions.

1. Focal hyperirritability of tissues, including muscle trigger points and pain referred from small joints (facet arthralgia) appears as a common factor in back and leg pain as well as in headache and neck and shoulder pain.
2. Many patients manifest both headache and back pain or back pain with neck and shoulder disability (32 of 150).

The concept of focal hyperirritability of tissues has a companion concept, i.e., temporary local anesthesia reverses this hyperirritable state. In treating patients with chronic pain, we take advantage of this second concept to provide pain relief, injecting local anesthesia with or without a small trace of steroid into painful joints or painful muscle trigger points.

This group of patients includes 102 male and 48 female patients. The mean duration of symptoms was six years, varying from five weeks to 44 years. Back pain patients were the most numerous (66). There were 36 who suffered headache alone, 28 who complained of headache and backache, and 10 who complained only of neck and shoulder pain, without headache. The degree of

<i>Headache and Back Pain</i>	<i>Back Pain</i>	<i>Headache</i>	<i>Neck and Shoulder Pain</i>
28	66	36	10

Overlap in symptoms tend to lend validity to the concept that these seemingly varied pain complaints have a common denominator in their etiology.

The pathology of a muscle trigger point is oedema plus platelet aggregation leading to focal anoxia of the muscle tissue. (Ref. 1. and 2.) One might postulate that the small joint, which suddenly gives referred pain down the leg or from the neck into the head, is also a "trigger point" and in some way suffering a dysfunction related to anoxia. One can reproduce this referral pattern by injecting a small amount of hypertonic saline in a facet joint. As in muscle trigger point

pain, a small amount of local anesthesia reverses this state of hyperirritability.

Despite the chronicity in these patients with the mean duration of symptoms being six years, plus, we have been able to achieve rather pleasing results. Chart 2 results are considered good to excellent when patient is relatively pain free and able to function in society.

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
<i>Good to Excellent</i>	<i>Improved, but require Ongoing Care</i>	<i>Failure — No Worthwhile Improvement</i>	<i>Lost</i>
99	32	11	8

If one adds all the lost to follow-up patients as failures, the failure rate becomes 12.8%. One would like to believe that such results would be duplicated by other physicians who would spend the time and effort necessary to learn these relatively simple injection techniques.

The most essential element of success is that the physician communicate acceptance. "I will try to put my finger on your pain and do something about it." The touching and searching for localized tenderness of muscle trigger points and exquisitely tender small joints carries a strong positive suggestion for improvement. In terms of accurate location of the involved joint, there is no substitute for finding the precise source of pain by observing the patient for body reaction. A fingernail or thumbnail with an alcohol wipe draped over it will elicit a response when the involved joint is palpated. The nail print can remain to identify the precise location. It is very surprising how readily one finds the joints by so marking the precise area of tenderness, whether it be cervical facet joints or lumbar facet joints.

Muscle trigger points have been "mapped" by Travell and Bonica. They are readily located by the oedematous "bubble" that slides under the palpating fingers. It is helpful to know the referral patterns of the common trigger points so that one can feel confident that the pain and the trigger point go together. Local injection of muscle trigger points or of small joints may be diagnostic as well as therapeutic.

It is important to involve the patient in his own recovery. A patient who has had six years of headache, has only 10 or 15 degrees of rotation of the head, will be totally amazed and incredulous

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\*\*Presented at the Annual Meeting of the Arkansas Medical Society, April 22-25, 1979, Little Rock.

after the cervical facets are injected at one or two levels (usually C4 - C5 or C5 - C6) and they can at that very moment turn the head and look over their shoulder at you. The next question will be, "How long will it last?" The answer should be "It will depend on you." If the patient can use the pain-free interval to improve function, strength and range of motion, then improvement will be persistent and progressive.

A painful lumbar facet joint will be manifest in several ways. Lateral flexion may be painful as the pressure is increased on the facet on the side of flexion. Extension is painful and often there is a zero range of hyperextension. The most typical manifestation of lumbar facet disorder is hitching as the patient attempts to straighten up from forward flexion. "Hitching" refers to a break in the rhythm as the erector spinal comes into contraction. This will manifest on the dynamic EMG as a burst of irregular discharges. Flexion may be limited.

After the thumbnail locates the involved facets, the lumbar 5 sacral 1 are most often involved, and the joints are injected, the improved pain-free range of motion can be demonstrated at once. By the time the patient is off the table, they can demonstrate the results. For lumbar facet injections, the preferred position for the patient is lying face down, with a pillow under the hips.

### **THERAPY PRIOR TO THIS**

#### **Interventions:**

A high percentage of patients had been on minor tranquilizers, of which diazepam is the most popular. Many had been on prolonged courses of passive physiotherapy, heat, whirlpool, massage, etc. Some had undergone varying degrees of success.

It is impossible to evaluate retrospectively who might have been relieved without surgery, as few had sufficient records to make surgical indications clear. A general impression is that many patients could have done better with pallative facet injection and exercise, rather than surgical intervention.

<i>Muscle Relaxants</i>	<i>(Traction) Passive Physio- therapy</i>	<i>Surgery</i>	<i>Chiro- practor</i>	<i>Codeine &amp; Analgesics</i>
13	11	32	8	20

Dr. Travell advocates spray and stretch techniques for treatment of these trigger points. I have no fault to find with this except that treat-

ment must be repeated more often, and more total times. Some muscles, such as the piriform, are totally inaccessible to spray techniques. I also object to her concept of "painful muscle spasm."<sup>9</sup>

In personal discussion, before a physician, Dr. Travell has been receptive to the basic concept of anoxia or ischemia as the common denominator of trigger point spasm.

### **SUMMARY**

Whereas muscle trigger point pain has been extensively studied, reproduced and patterns established over a period of the past forty years, and pain referral from the small joints of the back was demonstrated by Inman and Saunders thirty-four years ago, there remains a tremendous gap between the advice found in the literature and the individual physician performance. The patient with muscular skeletal dysfunction, including painful small joints and tender muscle trigger points, has perhaps one chance in a hundred of coming into the hands of someone fully versed in these relatively simple techniques.

The orthopedic surgeon with his intensive training in surgery and operative orthopedics seldom takes an active interest in soft tissue trigger points. We have trained a considerable number of orthopedic residents on the problem back service at Rancho Los Amigos Hospital. Hopefully, they will utilize these non-surgical non-destructive techniques.

It would be impossible to recover the charts and trace the five thousand pain patients that have been evaluated through the Problem Back Service at Rancho Los Amigos Hospital. I have attempted the more realistic goal of evaluating one hundred fifty privately referred patients the records of whom are readily accessible and easily reviewed.

The philosophy of the RLAH Back Service was

1. Improved function was the only real measure of success.
2. The only real physical therapy is exercise.
3. Simple non-destructive local injections to permit the patient a pain-free start on the exercise program, can be of lasting benefit with virtually no hazard.
4. Focal hyperirritability in muscle trigger points or small joints, tends to be reversible by local injection.
5. Focal anoxia, or ischemia, due to oedema and



platelet agglutination in muscle trigger points produces pain referred at a distance. Focal ischemia of joint cartilage and ligaments produced by loss of motion in the joint presents a reasonable hypothesis to explain the sudden "locking" and dysfunction of small joints.

6. It is reasonable to use local injection of muscle trigger points and/or dysfunctional joints as a therapeutic diagnostic trial before any invasive or potentially destructive surgical procedure is elected.

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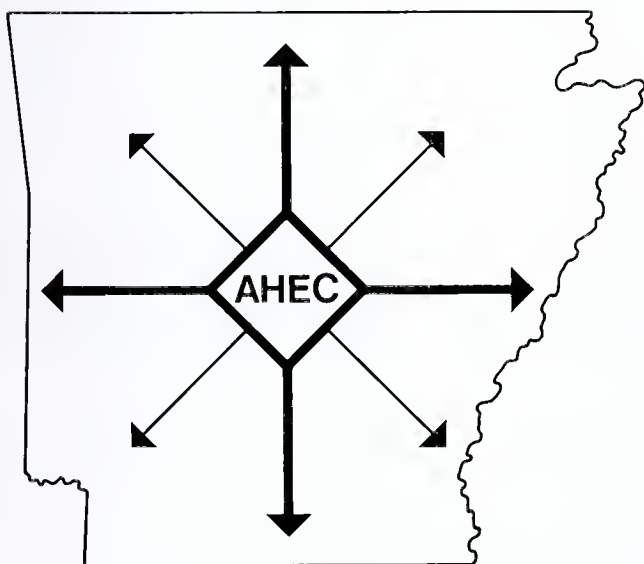


# The University of Arkansas for Medical Sciences Area Health Education Centers Program

Roger B. Bost, M.D.,\* and Paul Woodworth, Ph.D.\*\*

## INTRODUCTION

An Area Health Education Center (AHEC) Program for the State of Arkansas was originally proposed in January, 1973, by the Governor's Committee on Primary Health Care as one of six major components of a State Plan for Primary Health Care. The proposed AHEC plan was subsequently adopted, authorized and funded by the State Legislature in February, 1973. The program was assigned administratively to the University of Arkansas for Medical Sciences and the responsibility for the program was delegated specifically to the Chancellor, University of Arkansas for Medical Sciences.



As originally conceived, the AHEC Program was to focus principally on the state's primary health care needs, particularly in the medically underserved areas. The program was to include efforts to retain more of the graduates of the state's College of Medicine for practice in Arkansas; the training of more primary care physicians, particularly family practitioners, for the state; and to improve the geographic distribution of these physicians over the state. The program was also to address the needs of the medically underserved areas of the state for other health care professionals and disciplines, including nurses, clin-

ical nurse practitioners, physicians' assistants, and other personnel needed for improved primary health care. The plan called for the demonstration of the team approach to the delivery of primary health care services, and the utilization of this approach in the training of the various health and health-related professions students. It was envisioned that there would be six Area Health Education Centers over the state and that each would be involved in the recruitment and would provide a portion of the training of individuals from within the area, with the aim that they would ultimately return to their home communities for careers in the practice of primary health care.

The purpose of this article is to describe the AHEC Program, specifically its aims and purposes, its teaching resources, and the progress of its various programs over the past six years.

## OBJECTIVES

During the period from July, 1973, to date, the AHEC Program has been pursuing the following major program objectives:

- The establishment and operation of a system of AHEC medical libraries with units at each of the six locations, linked with the UAMS Medical Library at Little Rock and ultimately to the National Library of Medicine in Washington.
- The administration and supervision of the College of Medicine's preceptorship program for entering third year medical students.
- The provision of elective clinical rotations for senior medical students in each AHEC.
- The development and operation of accredited family practice residency training programs.
- The provision of clinical rotations in the AHECs for UAMS residents in the primary care specialties of internal medicine and pediatrics.
- The provision of clinical training in the AHECs for students of other health professions, health-related professions, and allied health discipline schools.

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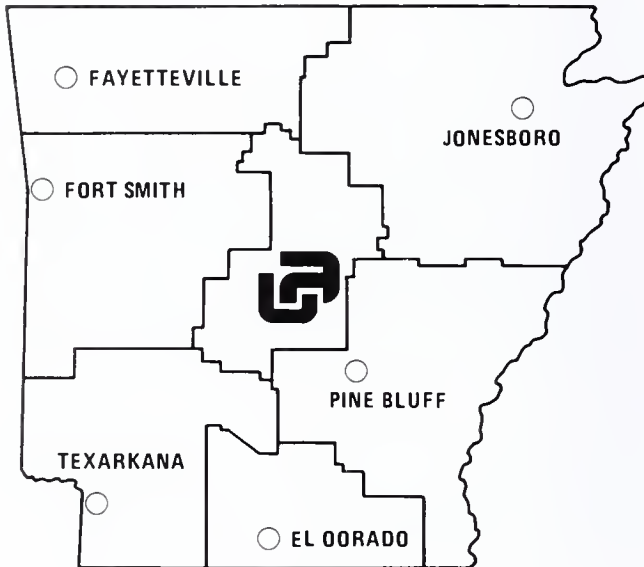


- The provision of continuing education programs for practicing physicians and other health profession practitioners over the state.

## RESOURCES

### AHEC Centers

The AHEC Program has established six education centers throughout Arkansas. These are located in El Dorado, Fayetteville/Springdale, Fort Smith, Jonesboro, Pine Bluff, and Texarkana.



These centers not only serve as primary training sites but are also utilized for coordinating various educational programs for health professionals within their respective areas. The AHEC Central Office located on the medical sciences campus at Little Rock coordinates and is administratively responsible for all the activities within and among the six statewide AHECs.

### Faculty

Each AHEC has a full-time physician director, who is responsible for all programs within his specific area. Those AHECs that have a Family Practice Residency Program also have a full-time residency program director and assistant director.

A full complement of physician-teachers, representative of the various medical specialties and subspecialties, participate in the teaching and training programs of each AHEC. These are practicing physicians in the AHEC communities, specially chosen because of their qualifications, including in most instances specialty Board Certification, and extensive experience in clinical practice. Each physician has received an appointment to the clinical faculty of the appropriate department of the College of Medicine, University of Arkansas for Medical Sciences. A total of

419 practicing physicians serve as the clinical teaching faculty in the following six AHECs:

El Dorado	41
Fayetteville/Springdale	88
Fort Smith	124
Jonesboro	56
Pine Bluff	73
Texarkana	37

### Community Hospitals

Each AHEC program is designed to make the most effective use possible of the teaching and training resources of the community hospitals. Those hospitals presently affiliated with the AHEC program include:

El Dorado	Union Memorial Hospital Warner Brown Hospital
Fayetteville/ Springdale	Fayetteville City Hospital Springdale Memorial Hospital V.A. Hospital Washington Regional Medical Center
Fort Smith	Sparks Regional Medical Center St. Edward Mercy Medical Center
Jonesboro	Craighead County Hospital St. Bernard's Hospital
Pine Bluff	Jefferson Hospital
Texarkana	St. Michael Hospital Wadley Hospital

### Library System

Each AHEC has a medical library of printed and audio-visual material to support the educational programs of the center with between eighty to one hundred-twenty current subscriptions with three to five years of backfiles. This library service is extended to health practitioners and health care institutions of the surrounding geographic area. Services available through the AHEC libraries include: searches, photocopying, current awareness searches, interlibrary loan services, bibliographic checks, and computer-assisted research through the UAMS Library (MEDLINE, TOXLINE, CANCERLINE, and AVLINE). The Area Health Education Center Libraries serve as the entry points into the UAMS Medical Library and the National Biomedical Communications Network.

## PROGRAMS

### Sophomore Preceptorship

Sponsored by the College of Medicine at the UAMS, the Sophomore Preceptorship Program is administered by AHEC. The six Area Health Education Centers are responsible for the coordination, selection, and supervision of preceptorships in the areas in which they are situated. The preceptorship is an optional program which offers students an opportunity to work on a one-to-one relationship with a physician-teacher for periods ranging from four to eight weeks. The program is designed to provide educational experiences for medical students who have completed their second year and to introduce these future physicians to the conditions and opportunities for practice in Arkansas communities with a population of less than 20,000. The following statistics are for 1978 and 1979, the two years that AHEC has been formally involved in the preceptorship program.

#### SOPHOMORE PRECEPTORSHIP PROGRAM

	1978	1979
Number of students participating	53	69
Number of physicians serving as preceptors	45	58
Arkansas communities	29	35

### Senior Medical Student Elective Program

The senior year of medical school consists of a wide variety of educational experiences designed to allow students to elect programs which supplement their prior training and are best suited to their career goals. Those electives offered through the AHECs are intended to augment the existing University medical education experience by providing students an opportunity to observe and participate in various aspects of private practice medicine as it exists in a community and private hospital setting. Students may choose single or multiple electives ranging from three to six weeks duration and are assigned by the AHEC Director to a community physician engaged in that particular field of medicine.

All six of the AHECs participate in this program, and the number of senior students electing to spend at least one six-week rotation in an AHEC has progressively increased since the program was initiated in 1974.

## SENIOR MEDICAL STUDENT

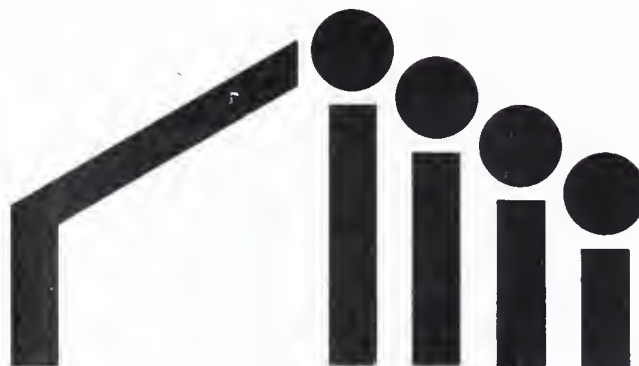
### ELECTIVE ROTATIONS

	74	75	76	77	78	79
	75	76	77	78	79	80
Fort Smith	19	22	20	12	20	13
Pine Bluff	16	19	25	29	29	23
El Dorado	4	2	5	3	2	24
Jonesboro		5	5	5	6	19
Fayetteville			5	15	19	16
Texarkana			5	2	10	14
Total						
Students	39	48	65	66	86	109
Total						
Rotations	47	57	93	87	115	123

### AHEC Family Practice Residency Program

Fully accredited three-year residency training programs in Family Practice were begun at AHEC-Fort Smith and AHEC-Fayetteville/Springdale in July, 1975, and at AHEC-Pine Bluff in July, 1977. Each of these training programs has a physician director and other full-time staff, and a full complement of College of Medicine appointed teaching faculty in all the major medical specialties and subspecialties from among the practicing physicians in each of the three AHEC communities.

The overall goal of the residency program is to teach and train future family practitioners, emphasizing continuing care, and focusing on the total patient, his family, and community. Another important goal of the program is to achieve a better distribution of primary care physicians throughout the state, particularly in the less populated areas of Arkansas.



In order to achieve these goals, the residency training programs emphasize instruction in internal medicine, pediatrics, obstetrics-gynecology, surgery, emergency room, behavioral science and



psychiatry, with additional experience in a variety of subspecialties. Also, each program has a fully staffed and equipped model Family Practice Center which is the focus of activity for out-patient training during the three-year program.

Each of the three AHEC Family Practice Residency Programs is partially supported by a federal training grant. Through these grants, it has been possible to expand the programs, and train a large number of residents. The grants were effective July 1, 1977, and each is assured for a period of three years, with provision for renewal upon successful application for a period of two additional years. Similar residency programs have been proposed for the AHECs at El Dorado, Jonesboro, and Texarkana.

#### AHEC FAMILY PRACTICE RESIDENTS

	75	76	77	78	79
	76	77	78	79	80
Fort Smith	2	9	14	14	21
Fayetteville/ Springdale	3	6	9	11	13
Pine Bluff			3	6	6
Total	6	15	26	31	40

#### Other Primary Care Residencies

The major portion of the training of residents in internal medicine, pediatrics and other specialties and subspecialties is accomplished at Little Rock under the direct supervision of the respective UAMS academic department responsible for program accreditation. However, in some of the training programs, periods of rotation away from the primary training base are permitted.

During the first three years of the AHEC Program, each second-year resident of the Department of Medicine of the College of Medicine served a two-month AHEC rotation. Three AHECs participated in this activity, Fort Smith, Pine Bluff, and El Dorado. The rotations were mandatory until the beginning of the 1977-78 academic year, when they became elective. With this change, the number of medicine residents participating in this AHEC rotation has decreased. The Department of Pediatrics is sending a limited number of its second-year residents to AHEC-Pine Bluff on a regular basis this year and plans to expand this to include AHEC-Jonesboro starting in June, 1979.

#### INTERNAL MEDICINE RESIDENTS

	74	75	76	77*	78
	75	76	77	78	79
Fort Smith	6	5	6	3	2
Pine Bluff	5	5	5	1	2
El Dorado	5	5	4		
Texarkana					2
Total	16	15	15	4	6

\*Required rotation dropped.

#### Continuing Education

The University of Arkansas for Medical Sciences is strongly committed to provide opportunities for the practicing physicians and other health professionals of the state to keep abreast of current knowledge and procedures related to their professional practice through continuing education.

Each Area Health Education Center provides an ideal organizational system for this continuing education, and an increasing number of offerings are being provided in each of the six AHECs (usually at the affiliated teaching hospitals) for the practicing physicians, nurses, and other health professionals of the area. Local specialists as well as full-time faculty from the UAMS present and/or participate in the many regularly scheduled AHEC conference sessions, formal courses and seminars in each of the six locations.

#### FUTURE DIRECTIONS

Progress toward more involvement in the clinical training of students of the other health professions and allied health disciplines has been very limited to date. Early in 1978, preliminary discussions began with representatives of the UAMS Colleges of Nursing and Pharmacy. These have now led to the development of formal programs of clinical training for senior nursing students in the AHECs, and the initiation of planning of programs for pharmacy students.

Additional anticipated expansion of the AHEC Program includes the establishment of: 1) Family Practice Residency Programs at El Dorado, Jonesboro, and Texarkana AHECs; 2) sub-area or SAHEC centers; 3) outlying satellite clinics; 4) health education programs for the public; and 5) increased AHEC involvement in regionalized continuing education programs for physicians and other health professionals.

SAHEC centers would be strategically located

over the state in intermediate sized communities in order to provide another level of clinical experience and training for health profession students and primary care residents. Each would relate to and be a part of one of the six AHECs. One such SAHEC has been established by AHEC-Fayetteville/Springdale at Harrison, Arkansas.

The satellite clinics will be established in small, isolated, rural communities, and will relate closely to the AHEC or SAHEC in which each is located and would become model programs of front line rural health care, serving as training sites for health profession students, particularly future primary care practitioners. One such clinic has been established at Lincoln, Arkansas. The clinic is open three half-days per week and is staffed by faculty and residents from the AHEC-Fayetteville/Springdale Family Practice Residency Program.

A cooperative program between AHEC, State and County Health Departments and public schools would offer health education to the public, particularly children. This program would emphasize the wellness concept, and awareness of the health hazards, and the responsibility of the individual in the maintenance of the healthy state.

Although continuing education for Arkansas physicians and other health professionals presently exists, future emphasis will be placed on expanding the programs to meet the needs of the various health professions over the state in the most convenient and accessible manner possible. The planning, coordination, and administration of these activities will be through the AHECs in cooperation with the continuing education programs of the four colleges at the UAMS.







# Office Orthopaedics

## An Update on Myelography

I. Leighton Millard, M.D.\*

For many years now, myelography has been an important diagnostic tool in the area of spine pain. Until recently the standard agent for myelography was Pantopaque. This is an oil based iodine compound that is radiopaque when placed in the spinal canal. It has been well recognized that there is a 10 to 15% false positive and a similar percentage of false negative readings and interpretations from Pantopaque myelography.

In recent years, particularly in Europe, a new water soluble compound called Metrizamide has been used extensively. The annotated bibliography is available from Winthrop Laboratories on the extensive research both in the country and in Europe. In comparing Pantopaque and Metrizamide, or as it is known commercially, Amipaque, it was immediately evident that Amipaque made a simpler test in that being water soluble, it was absorbed by the body and excreted through the kidneys. Therefore, the material did not have to be removed via the needle route as did the Pantopaque. It was also noted on myelographic films using Amipaque that greater detail is evident in the cervical and lumbar spine areas. It was also noted in numerous studies such as that of Hindmarsh in Sweden that the incidents of symptoms following Amipaque myelogram such as headache, nausea, dizziness, and meningeal reaction was smaller. It is generally accepted that incidents of nausea, vomiting and headaches following Pantopaque myelography will be approximately 30%. In most reported series these complications have a lower incidence following Amipaque myelography.

Amipaque Myelography, however, was noted to have another complication, that of convulsion. This incidence has been noted to approximately 1½% in most series following Amipaque myelography. This article is designed to report on 80 consecutive Amipaque myelograms performed at Baptist Medical Center between January and March of 1980. These 80 studies were done because of symptoms of pain related to the cervical, thoracic or lumbar spine. There were 52 males and 28 females. The patients were from 20 to 79 years of age with an average age of 40. Of these patients, 25% showed some degree of headache, nausea and/or vomiting following the Amipaque myelogram. 3.75% of these patients had some degree of convulsive disorder following the Amipaque myelogram.

In reviewing these cases, it is noted that myelographic studies were performed by members of the neurological, neurosurgical, radiological and orthopaedic medical staffs. It was also noted that the pre- and post-myelogram care of these patients varied considerably according to the wishes and desires of the attending physician. It was also noted that 34 of the 80 studies were done by one doctor who used a protocol of pre-myelogram and post-myelogram hydration with intravenous fluids. In these 34 cases there was an incidence of convulsion of less than 1%. It was also noted in this survey that all doctors carefully avoided the use of phenothiazine medication prior to or shortly following the myelogram examination. In one case where phenothiazine medication was administered to the patient the day before the myelogram examination, a mild convulsive disorder did develop following the myelogram.

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In conclusion, this brief report shows that a non-toxic water soluble agent with very low neurotoxicity is a quite suitable agent for injection into the spinal canal for dye contrast radiological studies. It is felt from this brief study which is admittedly not statistically significant, that pre- and post-myelogram hydration and careful avoidance of concomitant phenothiazine drug administration is important. Therefore it appears that Metrizamide (Amipaque) has more advantages in clinical diagnosis of spinal pain than disadvantages.

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## ELECTROCARDIOGRAM

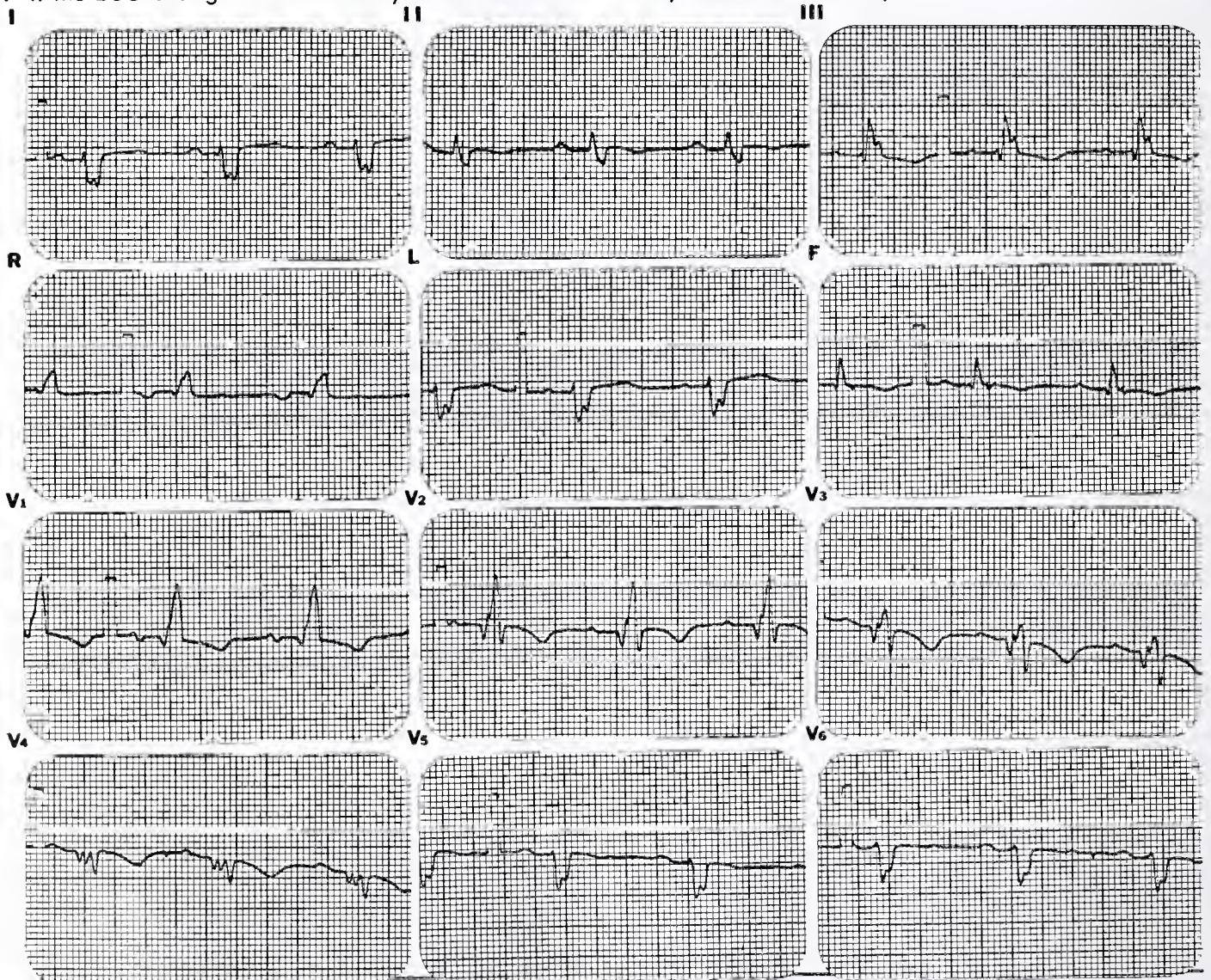
## OF THE MONTH

The Department of Cardiology, University of Arkansas College of Medicine  
(See Answer on Page 117)

**HISTORY:** Mr. J. J. is a 68-year-old black patient who presented with a near-syncopal episode experienced while attending the funeral of a friend. He denied chest pain of any type. There was a recent history of an upper respiratory infection thought to have been viral in etiology but his past history was otherwise negative. Physical examination revealed a diaphoretic hypotensive man with pulmonary rales, a pericardial friction rub, and an S<sub>3</sub> gallop. His ECG is shown.

Based upon the history as presented and the ECG, which of the following statements are true and which are false?

1. Either acute myocardial infarction or myocarditis could account for most abnormalities described in the patient's history and physical examination.
2. The ECG shows evidence of LBBB, first degree AV block, and inferior infarction.
3. Electrocardiographic findings of infarction cannot be seen on this trace because of conduction disturbance.
4. The trace shows conduction disturbance that would merit at least temporary pacing.
5. If the ECG changes are secondary to an infarct and not myocarditis, then the patient has a good prognosis.



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# Pediatric Review:

## Urinary Tract Infection in Childhood

Eileen Ellis, M.D., and Watson C. Arnold, Jr., M.D.\*

Infections of the urogenital tract are a common problem in children. In addition, urinary tract infections in children more often lead to acute pyelonephritis. An episode of acute pyelonephritis or recurrent urinary tract infection in a child should alert the clinician to the possible presence of structural abnormalities of the urinary tract. This paper will review the current information available on the incidence, diagnosis, therapy and evaluation of children with urinary tract infections.

### INCIDENCE

At any one time, approximately one percent of the pediatric age group will have a urinary tract infection. The incidence of urinary tract infection in children varies with both age and sex. Urogenital infections occur in approximately 1% of newborns with a 2:1 male predominance. In older children the incidence rate rises to 2.5% with a female predominance.<sup>1</sup> Congenital defects causing obstruction and subsequent infection are more prevalent in males. Currently, urinary tract infections (UTI) are thought to result from ascending infection. In the lower urinary tract, enteric bacteria reach the bladder via the urethra and in acute pyelonephritis bacteria ascend the ureter to the kidney. Neonates, however, are an exception. A UTI in a newborn usually results from septicemia and hematogenous dissemination to the kidney.<sup>1</sup> Though acute pyelonephritis may result in renal scarring, the risk of significant progressive renal insufficiency is small and usually occurs with structural abnormalities of the urinary tract. It is now recognized that chronic interstitial nephritis can result from a variety of causes other than chronic pyelonephritis and that chronic pyelonephritis therefore is an uncommon cause of renal failure.

### DIAGNOSIS

The clinician presented with a child with a urinary tract infection must attempt to differentiate between lower and upper tract infection. The clinical manifestations of UTI are commonly vague and non-specific. Urinary frequency, dys-

uria, and suprapubic tenderness may not occur even in older children, and conversely, half of girls presenting with frequency and dysuria do not have UTI. Other causes of frequency and dysuria include urethritis from chemical irritants such as bubble bath, vulvovaginitis, foreign bodies, viral infections, pinworms or emotional disturbances. The child with acute pyelonephritis more often will present with signs of systemic infection including fever greater than 102° F, costovertebral angle tenderness, nausea and vomiting. Since the clinical findings are non-specific, other tests are needed to ascertain the presence and site of urinary infection.

The most important step in the diagnosis of a UTI is the collection of a proper urine specimen for culture. This can be accomplished in one of three ways: 1.) suprapubic bladder tap, 2.) bladder catheterization, or 3.) midstream clean-catch urine. A suprapubic bladder tap is a safe and simple procedure that is recommended in infants under 12 months of age. Bladder catheterization using sterile technique is indicated in females over 6 months of age. A midstream, clean catch specimen can be obtained with direct nursing supervision from children who are able to void on command. Bag urine collections are seldom adequate and should only be used in screening for pyuria or bacteruria.

A presumptive diagnosis of urinary tract infection can be made from an abnormal urinalysis particularly when the signs and symptoms of urinary tract infection are present. However, definitive diagnosis must be based on quantitative cultures of the urine. The presence of bacteria in a freshly spun urine correlate best with culture results. Pyuria, defined as five or more white blood cells per high power field on a centrifuged specimen correlates poorly with bacteruria and pyuria may occur in as few as 40% of children with documented lower tract infection. Conversely, children with pyuria may not have bacteruria. Proteinuria and hematuria also occur in patients with urinary tract infection but correlate poorly with presence and site of infection and children with fever from any cause may also

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have white cells, red cells and protein in their urine.

Significant bacteruria is present when a mid-stream clean-catch urine specimen contains a pure culture of 100,000 bacteria/ml. Mixed cultures should be repeated as they probably represent contamination. The accuracy of a single positive culture obtained from a clean-catch specimen is 80%. This accuracy increases to 95% when a second positive culture is obtained.<sup>3</sup> A urine culture containing greater than 10,000 bacteria/ml is significant if the specimen is collected by urethral catheterization. A urine culture obtained by a suprapubic bladder tap is considered positive if any organisms are present in the culture.

*E. coli* is the organism cultured from 80-90% of all initial lower tract infections and in 70% of recurrences. In children with a second urinary tract infection 80% are reinfections with a different bacterial species or serotype. In acute pyelonephritis, *E. coli* remains the most common organism but accounts for only 60-65% of positive cultures. *Proteus* and *klebsiella* species are the most common other organism cultured from patients with pyelonephritis.<sup>4</sup>

Once the presence of a UTI is documented by a positive urine culture lower tract infection (cystitis) must be differentiated from upper tract infection (pyelonephritis). The definitive test to determine the presence of upper tract infection is the bladder washout test as developed by Fairlay.<sup>5</sup> However, since the bladder washout technique is invasive, other more indirect tests have been used to differentiate upper and lower tract infection.

Two easily performed, non-specific tests often used to differentiate upper from lower tract infections include the erythrocyte sedimentation rate (ESR) and the C-reactive protein (CRP). Patients with an ESR  $\leq 21$  mm/hr and CRP  $\leq 30$   $\mu$ g/ml are more likely to have lower tract infection. Those with ESR  $> 25$  mm/hr and CRP  $> 30$   $\mu$ g/ml more commonly have pyelonephritis.<sup>6</sup> However, elevations of the ESR and CRP are only indicators of systemic infection and are not direct evidence for renal parenchymal infection. Though decreased urinary concentrating ability occurs commonly in patients with acute pyelonephritis, this is not a reliable means for differentiation between upper and lower tract infections, especially in newborns who cannot

maximally concentrate their urine until six months of age.

The measurement of total urinary lactic dehydrogenase (LDH) and urinary LDH isoenzymes are the most useful tests to determine the site of urinary infection. In normal children and children with lower urinary tract infection, total urinary LDH is less than 30 mU/ml and isoenzymes I and II predominate. Children with acute pyelonephritis have a total urinary LDH greater than 30 mU/ml and urinary LDH isoenzymes IV or V are greater than 10% of the total LDH.

Antibody-coated bacteria in the urine have been reported to correlate with upper tract infection in adults. In children no significant correlation between the presence of antibody-coated bacteria in the urine and the localization of infection has been shown.<sup>8</sup> The presence of antibody-coated bacteria in the urine indicates that the uroepithelium has been invaded by bacteria rather than the site of the infection. This test is expensive, not readily available and unreliable in children.

#### TREATMENT

The antibiotic chosen for the treatment of urinary tract infections depends on the sensitivity of the infecting organism. Eradication of bacteruria correlates more closely with the urine concentration of antibiotics than with the serum antibiotic concentration.<sup>4</sup> Most antibiotics are excreted and concentrated by the kidney, resulting in a urine with antibiotic levels much higher than in the serum. Renal cortical concentrations of antibiotics are 5-10 times serum levels and renal medullary and urinary antibiotic concentrations are 10-50 times serum levels.<sup>4</sup>

Neonates with urinary tract infections should be treated for sepsis with intravenous ampicillin, 50-75 mg/kg/day, and intravenous or intramuscular gentamicin, 5 mg/kg/day. In older infants and children ampicillin, 50-100 mg/kg/day, is the recommended antibiotic for initial therapy in both upper and lower tract infections. Sulfasoxazole 150 mg/kg/day may also be used at this setting. In patients who cannot concentrate their urine such as those with sickle cell disease and mild chronic renal insufficiency, the dosage of ampicillin should be increased to 100-200 mg/kg/day. Cephalosporins, aminoglycosides, or other appropriate antibiotics may be used depending on bacterial sensitivities. A repeat urine culture is obtained 48 to 72 hours after therapy has begun

and will be negative if antibiotic therapy has been effective. For both lower and upper tract infection, treatment should be continued for 10 to 14 days; longer treatment has not been found to be more effective.<sup>9</sup> In addition to antibiotics, increased fluid intake and increased urine flow rate with frequent voiding is recommended. The use of cranberry juice to acidify the urine is both expensive and futile. Most patients rebel after ingesting the 1-2 quarts a day of cranberry juice needed to maintain an acid urine. Ascorbic acid (Vitamin C), 100 mg twice a day, will adequately acidify the urine and is needed only in those patients on Methenamine mandelate.

Treatment for pyelonephritis may be given orally or intravenously. The intravenous route is preferred if the child is too ill to tolerate oral medications. Sulfonamides are not recommended for treatment of acute pyelonephritis as they are not concentrated in the renal parenchyma. Once the child improves, oral medications may be started. Treatment, follow-up and cultures are similar to those children with urinary tract infection.

A marked reduction in the incidence of recurrent UTI has been demonstrated with prolonged, low-dose antibiotic therapy. However, the expense and potential toxicity of prolonged antibiotic prophylaxis should be limited to those children with closely spaced, recurrent urinary tract infection. Recommended therapy for adults or children includes trimethoprim-sulfamethoxazole, 2 mgTMP/10 mgSMX/kg, or nitrofurantoin, 1-2 mg/kg, given nightly for three to six months. Bacterial resistance seldom occurs with these antibiotics. Methenamine mandelate has the disadvantage of requiring multiple daily doses of an urinary acidifying agent. Sulfonamide therapy is limited by the rapid development of resistant strains of bacteria.

#### FOLLOW-UP

Repeat urine cultures are important in documenting relapse or reinfection. A urine culture should be obtained one week after the end of antibiotic therapy to ensure that the infection has responded to therapy. Thereafter, urine cultures should be obtained at three-month intervals in the first year and four-month intervals during the second year. Recurrences are often asymptomatic and most frequently occur in the three months following initial infection. As many as 80% of girls with urinary tract infection will have recur-

rences in the three years following their initial infection and half of these recurrences are asymptomatic.<sup>9</sup> These girls may also be more susceptible to recurrences during pregnancy.

Radiographic studies should be included in the evaluation of UTI in certain patients. An intravenous pyelogram (IVP) and voiding cystourethrogram (VCU) should be scheduled four to six weeks following resolution of the second infection in girls or following the initial infection in neonates, boys, or in any patient with pyelonephritis. During an acute episode of urinary tract infection, swelling of the bladder wall may result in vesicoureteral reflux that spontaneously resolves. Vesicoureteral reflux, a common finding on VCU, is graded by the following criteria: grade 1: reflux limited to the ureter; grade 2: reflux reaching the pelvis and calyces without dilation of the collecting system; grade 3: complete reflux with some distention of the ureter, pelvis and calyces; and grade 4: reflux associated with massive dilation of ureter, pelvis, and calyces. Spontaneous resolution of grade 1 and 2 reflux occurs in 75 to 80% of children.<sup>10</sup> Spontaneous resolution of grade 3 and 4 reflux is rarer and these patients should be referred to a urologist for follow-up.<sup>10</sup> Serial VCU's should be performed in children with reflux every 6-24 months until resolution. If reflux progresses, then urologic consultation should be obtained. If structural abnormalities of the kidney are absent on initial exam, an IVP need be repeated no more often than every three to five years to determine if scarring has occurred. Cystoscopy is seldom indicated if structural abnormalities are not present. Bladder neck obstruction and distal ureteral stenosis are present as often in normal girls as in those with recurrent UTI and the effectiveness of urethral dilatation has never been demonstrated in a controlled study.<sup>3</sup>

#### SUMMARY

Urinary tract infections are a common occurrence in the pediatric age group. Differentiation between upper and lower tract infections may be difficult. Symptoms of lower tract infection include urinary frequency, dysuria, and suprapubic tenderness. Symptoms of upper tract infection include fever  $>102^{\circ}\text{F}$ , chills, and costo-vertebral angle tenderness. A properly collected urine culture must be obtained. Though suggestive, a urinalysis is of little help in determining if a UTI is present. Tests to determine the



site of infection include urinary concentrating ability, CRP, ESR, total urinary LDH and urinary LDH isoenzymes. The bladder washout technique is the definitive test for determining the site of infection. After a urine culture is obtained, treatment is initiated with appropriate antibiotics for 10 to 14 days. Ampicillin 50-100 mg/kg/day is the recommended initial treatment. Follow-up should include frequent urine cultures during the first three years following initial infection. Closely spaced recurrent infections should be treated with nitrofurantoin or trimethoprim-sulfamethoxazole for three to six months. Radiologic evaluation with an IVP and VCU should be performed four to six weeks following the second infection in girls or following the first infection in neonates, boys, or patients diagnosed as having acute pyelonephritis.

**TABLE 1.**  
**DIAGNOSIS OF PYELONEPHRITIS**

Symptoms:

fever  $> 102^{\circ}\text{F}$

chills

CVA tenderness

Suggestive tests:

loss of urinary concentrating ability

ESR  $> 25\text{ mm/min}$

CRP  $> 30\text{ }\mu\text{g/ml}$

urinary LDH  $> 30\text{ mU/ml}$

urinary LDH isoenzyme IV or V  $> 10\%$

Confirmatory test:

positive bladder washout test

**TABLE 2.**  
**RECOMMENDATIONS FOR**  
**UROLOGIC EVALUATION**

A. *Radiographic evaluation*

1. Males (all ages) and females less than one year old: Intravenous pyelogram (IVP) and voiding cystourethrogram (VCU) 4-6 weeks after resolution of initial infection.

2. *Females:*

- a. IVP and VCU after first documented infection if symptoms suggest pyelonephritis, or
- b. IVP and VCU after second infection for all others.

- B. Further urologic evaluation including cystoscopy is considered for patients with any radiographic abnormality.

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## EDITORIAL

# Mayo Symposium on Duodenal Ulceration

Alfred Kahn, Jr., M.D.

Gastro-intestinal disorders make up a very high percentage of those confronting the primary physician. Of the gastro-intestinal group, duodenal ulcer is one of the most commonplace serious disorders. It is well agreed that the treatment of the uncomplicated duodenal ulcer is medical including antacids, anti-secretory drugs, avoidance of stress if possible and moderate dietary limitation. The avoidance of caffeine, alcohol, tobacco and spices is usually recommended.

For a long time it has been taught that duodenal ulcer surgery should be recommended for four complications: intractable pain, bleeding, perforation and obstruction. These criteria still hold. But there is much controversy as to which type of surgery should be used. This is the topic of a symposium from the Mayo Clinic (Mayo Clinic Proceedings Volume 55, page 5, January 1980) — although there is one paper in the group on “Medical Versus Surgical Therapy for Duodenal Ulcer” by Juan-Ramon Malagelada from The Division of Internal Medicine. Malagelada feels that Cimetidine which is an  $H_2$  receptor antagonist is an effective valuable drug to employ in a medical program. He, of course, recommends antacids as aluminum preparations and magnesium preparations. The value of anticholinergic drugs has been questioned but Malagelada feels that they probably are of value — especially in combination with  $H_2$  blocking agents. Under investigation are some new drugs including bismuth compounds, carbenoxolone derivatives, sulpride, etc. Prostaglandin derivatives are also being studied. The author feels that 70% to 90% of duodenal ulcer cases should get healing on appropriate, good medical treatment using Cimetidine and one or more antacids. This really means accelerated healing as ulcers have a tendency to heal anyway. Pain relief does not parallel

crater healing and cases should be monitored for this — higher drug doses or more extensive drug combinations may be necessary. Malagelada reports that duodenal ulcer recurrence rate after Cimetidine treatment may be as high as 80%; this is said to be no higher than where no specific treatment is used; prophylactic Cimetidine therapy is said to cause a definite decrease in duodenal recurrence. The side effects and risk of medical treatment of duodenal ulcer consists mainly of the side effects of the drugs which are used as stasis with anticholinergic drugs, etc. Malagelada reviewed in some detail the matter of ulcer surgery and its complications as viewed by gastro-enterologist with internal medicine background; he mentions at the outset that there is mortality rate from surgical procedures that would be unacceptable from drug use; surgical statistics are not as accurate in evaluating cases as so many medical cases are followed by gastro-scope and the surgical cases are not; post surgical cases may have complications as dumping syndrome, diarrhea, reflux gastritis, etc.; the cost effectiveness has not been thoroughly worked out for medical or surgical treatment.

Assuming medical therapy is for some reason a failure, then the question arises “Which Operation for Duodenal Ulcer.” This is the subject of a discussion in the same symposium on Duodenal Ulcers as Malagelada’s paper; Keith A. Kelly is the author. He outlined the pros and cons of three types of surgery: Vagotomy and pyloroplasty, vagotomy and antrectomy, and proximal gastric vagotomy. The older procedures of partial gastrectomy and gastro-enterostomy are not used much at the Mayo Clinic anymore. Kelly says that truncal vagotomy results in as good healing of duodenal ulcer as gastrectomy; it does cause diarrhea in some individuals; truncal vagotomy



is also said to decrease gastric contractions and to lengthen gastric emptying time; if a pyloroplasty was performed to speed gastric and emptying, it caused troublesome symptoms at times. The Mayo Clinic got good control of ulcer symptoms with antrectomy and vagotomy but again, the patients had some post operative symptoms. Kelly reports that proximal gastric vagotomy has been an effective operation; this reduces the output of hydrochloric acid and pepsin; this procedure reduces post operative sequelae, but it was not as effective as vagotomy and antrectomy. In a separate paper Kelly and his associates found a recurrent ulcer rate of 4.9% in 223 patients after proximal gastric vagotomy. There was no mortality. Serious prolonged post-operative symptoms occurred in less than 3% of the patients.

Pemberton and van Heerden reported on "Vagotomy and Pyloroplasty In The Treatment of Duodenal Ulceration" — in 182 patients. They had an overall mortality of 4.4%. Recurrent

ulcers appeared in 12.3%. Post gastrectomy occurred in 61 patients. Diarrhea was present in 16% and dumping 7.8%. The authors state "We believe that vagotomy and pyloroplasty undertaken electively for the cure of chronic duodenal ulcer disease does not sufficiently protect against recurrence."

Hubert, et al., reviewed some of The Mayo Clinic statistics on "Truncal Vagotomy and Resection In The Treatment of Duodenal Ulcer." Their results revealed a post-operative mortality of 1.1%. The recurrence rate was 0.7%. Serious post-operative symptoms were low — diarrhea 0.7% and dumping 1%. They feel that this is a worthwhile procedure.

In view of the fact that there is some mortality involved in the surgical therapy of duodenal ulcer, cases selected for surgery should be carefully chosen — and the procedure used should best suit the individual patient's need.



## "From Other Years"

*Arkansas Medical Monthly*  
Vol. 1 No. 3 June, 1880 p. 134

### EUREKA SPRINGS

The following analysis of the water from these springs was made by Wright & Merrill, analytical chemists, of St. Louis, for the benefit of Dr. B. M. Hughes, of Eureka:

	<i>Grammes.</i>	<i>Grains.</i>
Total solids per gallon .....	.220	3.397
of which there is of		
Carbonate of Lime .....	.104	1.606
Soluble Silica .....	.007	0.108
Organic matter composed of		
Crenic Acid (Mulder) .....	.026	0.400
Extractive Matter .....	.074	1.141
Loss .....	.009	0.138

This water is remarkable for its purity, as its specific gravity, which is at 60 deg. F., only 1.000103, and the small amount of solids found, plainly indicates. In this respect it is very similar to the celebrated medicinal waters of Baden in Germany and Pfeffers in Switzerland.

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*Arkansas Medical Monthly*  
Vol. 1 No. 2 May, 1880 p. 93

### MOSQUITOES AS A STIMULANT TO REPRODUCTION

A gentleman traveling in the lowlands of this State was surprised to find a great number of children at the different houses which he passed. Stopping at a house where a numerous progeny seemed to abound, he inquired of its maternal guardian for the cause of this universal human prolificness, 'Oh! my dear sir,' she answered, '*the mosquitoes are so bad in this country that we folks can't sleep at night!*'

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*Transactions of the State Medical Society  
of Arkansas*

*5th Annual Session — May 1880*

### Address of E. T. Dale, M.D. President of the Society

... It is time that the profession should take a more prominent part in public affairs, be more interested workers for and promoters of public legislation. It is the duty of the physicians, as

citizens, to see that the interests of State medicine are cared for; if they do not do this, but leave the matter of public hygiene or preventive medicine, the establishment of a Board of Health, of institutions for the care of the sick, the questions of medical education and medical jurisprudence, together with the thousand-and-one other questions, which bear upon the lives and health of our people, to be regulated by those who know little and care less about these subjects, Arkansas will long be far behind those States in which more enlightened ideas are held and more earnest citizens' work done by their medical men.

The necessity for a State Board of Health, made more apparent by the yellow fever epidemics of the past two years, and the good accomplished by the various health organizations of the country in preventing the spread of this disease, is becoming more and more appreciated by the people of our State, and I have little doubt if the profession will make the proper effort, our next Legislature will pass a law creating a State Board of Health, as well as one providing for the establishment of a State Lunatic Asylum. . . . Let me, then, urge you and all other physicians in the State who have the interests of medical science at heart, as physicians and citizens who have the interests of the State and its people constantly claiming your attention, to begin now and work until a proper law is passed creating a State Board of Health, with authority and means to prosecute its work.

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*Arkansas Medical Monthly*

Vol. 1 No. 3 June, 1880 p. 136

The Philadelphia Medical Times says that a correspondent writing from the famine districts of Ireland, claims to have seen 'Hundreds of children from the age of two to twelve, with hair on their skinny arms and cheeks fully one inch long, a false growth caused by decay and hunger.'

If this were the universal result of poverty and starvation, two-thirds of the doctors in Arkansas would be as shaggy as Newfoundland dogs. On the contrary, they are generally as naked as Spanish curs and thin as greyhound.

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*Arkansas Medical Monthly*

Vol. 1 No. 3 June, 1880 p. 137

There are fifteen hundred practicing physicians (so-called) in the state of Arkansas, of whom only

five hundred are graduates of medicine. Cincinnati and Philadelphia might afford a branch office here for the sale of bogus diplomas.

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*Arkansas Medical Monthly*

Vol. 1 No. 5 August, 1880

## ARKANSAW DOCTORS

### EDITORIAL

The profession of this State are as universally scientific and thorough in their medical education as the average physician of any State in the Union. But a majority of them are undoubtedly too much *domesticated*. They are so much absorbed in their village or neighborhood practice, and so happy in their own quiet family circles, that a spirit of indifference is engendered among them toward all enterprises which seek to arouse them from this happy but fatal lethargy. More adventurous but unworthily inspired spirits, usually of the cities and larger towns, take advantage of this condition of affairs, and like political demagogues with brass-hued cheeks, *create monopolies* and usurp powers which they could not acquire through the popular voice. This authority, iniquitously begotten, is prostituted to the baser purposes of pecuniary gain and self aggrandizement.

We ask the thinking, reasonable members of the profession in this State, who are the professed leading practitioners of the day, and how did they acquire their distinction? Who rules and governs our medical societies, and reflects falsely our characters abroad? We answer in a spirit of unimpassioned earnestness, that with a few honorable exceptions, they are men who owe their rank and prosperity in life to other than medical qualifications. With such arrogance, chicanery, hypocrisy and 'tricks of trade' as enrich rogues, they are living exemplars of political lobbyists, falsely engrafted upon our professional body. We appeal to the *Arkansaw* doctors, to come out and *vote*. Join your county societies, organize and work for the general good and advancement of the profession. Throw off the *incubus* put upon you by 'rule or ruin' spirits, and come to our State meetings in future for the purpose of advancing your professional interests, and not to eulogize and magnify the self-assumed grandeur of any man. Do not swell your local societies to unjust proportions by taking into active membership all the druggists and retired practitioners of your re-



spective counties, and thus falsely increase your basis of representation in our State meetings. They have no professional allegiance to the laws you make, and should not be allowed to assist in their making. Work for the legitimate advancement of the profession and take down those stereotyped names, adulterous images upon the proposed altar of your affections, and subserve the true principles of organized medicine. When this is done your duties will have been fulfilled, and we can proudly assume a place among the advancing spirits of the age.

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*Transactions of the State Medical Society  
of Arkansas at its*

*Fifth Annual Session — May 1880 p. 15*

Whereas, The *Arkansas Medical Monthly* has been recently established in this city, and its editor, in the initial number of said journal; having announced his intention of supporting the interests of organized medicine in this state, and all its principles as endorsed by the American Medical Association, and expressed himself in favor of medical legislation to protect the people from the outrages of quacks and charlatans, and furthermore, being in favor of all interest which tends to the advancement of medicine and medical education, be it therefore

‘Resolved, That we, as a body, give our heartfelt endorsement to this enterprise, and pledge ourselves as individual members to do all in our power toward its material aid and encouragement, and promise to exercise our personal influence in its behalf.’

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*Arkansas Medical Monthly*

Vol. 1 No. 8 Nov. 1880

**THE DOCTOR OF THE PAST COMPARED WITH  
THE DOCTOR OF THE PRESENT**

By J. A. Seaver, M.D.

The time once was when to be a doctor of medicine was as great as to be a king, for he ranked second to no other professional man, and was looked upon as being a man of high mental culture, possessing a moral worth which placed him above reproach; in short, he was the ideal man. In those good old days the wealthy man would give his son a medical education, because it was social promotion, and in case he should lose his wealth he would still have a lucrative and highly respectable calling by which he could

maintain his position in society; consequently his profession to him would be what an insurance is to the merchant. . . .

But how is it at present with the man who decides to study medicine? He must make up his mind to undergo all the privations that a girl does when she decides to take the veil and become a sister of charity. And as far as the honor of the title of ‘Doctor of Medicine’ — where is the sensible man who is unfortunate enough to bear the same who would not fain exchange it for the plain Mister? realizing that the latter carries far more dignity than the former. . . .

Let us take a view of the matter and see if we can discover the reason why the profession has so sadly retrograded from its former greatness. There is no one who will presume to say there is not as much natural talent and genius among the doctors of to-day as there was a half century ago. Just at present our country is agitated from center to circumference on the subject of a higher standard of medical education. Every State is legislating against the so-called quacks, and all of the colleges are advocating the three-term system. Now, I think those who have passed through a collegiate course will coincide with me when I say that much of the chattering which is being done about elevating the profession by legislation, and by prolonging the collegiate course — both of these moves, I say, savors much of ‘red tape.’ And while I have not seen that much learning makes a man mad, yet when we see there is something wrong, the surest way to remove the odium is to find where it lies. I believe that all will agree with me when I say that the average doctor is much better fitted for his calling than the average doctor of a half century ago was; and I would rather have one of the young doctors, who had just received a diploma in the spring of 1880, prescribe for me than to have Dr. Hippocrates himself. . . .

The principles of medical societies and ethics are good, but how often do we see it is only a game where the big fish eat the little ones? The intent and purpose of medical societies is to protect good men, and not to make good men out of bad ones; for when a man is destitute of principal, you may sandwich him between good men as much as you please and yet he will still have the same odor. . . .

Even here in the ‘City of Roses,’ where nature

has bestowed her gifts so lavishly that one would suppose the beauties and grandeurs of the locality would exercise such a salutary effect on the inhabitants that we would not need medical societies nor ethics to induce every one to do just right; but sometimes a doctor, who is a member of all the societies, will attend a case of labor for half price! of course, he just does it because he has such a sympathetic nature, and knows if he does not deviate from his usual fee it may fall into the hands of some incompetent 'quack.' . . .

After reviewing the matter impartially, I have come to the conclusion that it is more cunning that is needed to enable the young doctor to make a success of life, and not a higher education in medicine. It would be a good idea to establish a new chair in all of the colleges. Take some old fellow who was well versed in all the arts of gaining practice, and let him lecture the students thoroughly, and instead of turning out graduates who are as incapable of self-preservation as an infant just born, we could turn the young doctors out with the assurance that they could cope with the craftiest of their contemporaries. What I have had to say on the subject of degeneracy of the medical profession is only my opinion, but in reality he who would attempt to restore it to the excellency which it once enjoyed would have very much the same task that Rienzi had when he attempted to restore the Italians to what the Romans once were.

Little Rock.

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*Arkansas Medical Monthly*

Vol. 1 No. 8 Nov. 1880 p. 386

**THE OLD OAKEN BUCKET**

With what anguish of mind I remember my childhood,  
Recalled in the light of a knowledge since gained;  
The malarious farm, the wet fungus-grown wildwood,  
The chills then contracted that since have remained;  
The scum-covered duck-pond, the pig-sty close by it,  
The ditch where the sour-smelling house drainage fell;  
The damp, shaded dwelling, the foul barnyard nigh it —  
But worse than all else was that terrible well.  
And the old oaken bucket, the mould-encrusted bucket,  
The moss-covered bucket that hung in the well.

Just think of it! Moss on the vessel that lifted  
The water I drank in the days called to mind!  
Ere I knew what professors and scientists gifted  
In the water of wells by analysis find.  
The rotting wood fibre, the oxide of iron,  
The algae, the frog of unusual size;  
The water-impure as the verses of Byron —  
Are things I remember with tears in my eyes.

And to tell the sad truth — though I shudder to think it —  
I considered that water uncommonly clear,  
And often at noon, when I went there to drink it,  
I enjoyed it as much as I now enjoy beer.  
How ardent I seized it with hands that were grimy,  
And quick to the mud-covered bottom it fell;  
Then soon, with its nitrates and nitrites, and slimy  
With matter organic, it rose from the well.

Oh! Had I but realized, in time to avoid them,  
The dangers that lurked in that pestilent draught,  
I'd have tested for organic germs and destroyed them  
With potassic permanganate ere I had quaffed;  
Or, perchance, I'd have boiled it and afterwards strained it  
Through filters of charcoal and gravel combined,  
Or, after distilling, condensed and regained it  
In potable form with its filth left behind.

How little I knew of the dread typhoid fever  
Which lurked in the water I ventured to drink;  
But since I've become a devoted believer  
In the teachings of science, I shudder to think.  
And now, far removed from the scenes I'm describing,  
The story for warning to others I tell,  
As memory reverts to my youthful imbibing.  
And I gag at the thought of that horrible well.  
And the old oaken bucket, the fungus grown bucket —  
In fact, the slop-bucket that hung in the well.

\* \* \* \*



**ANSWER—Electrocardiogram of the Month**

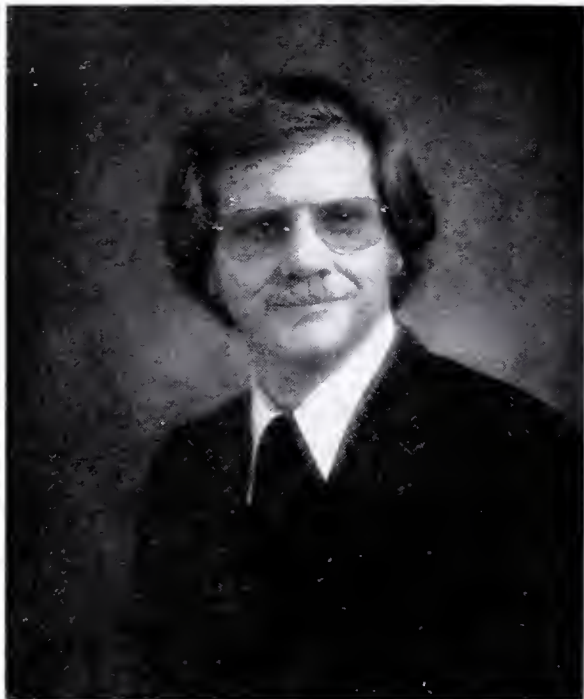
**DISCUSSION:** The history and physical as presented are both consistent with either an infarct or myocarditis. Many infarcts may be "silent" with respect to chest pain, indeed, as many as 20% in some reported series. The ECG shows sinus rhythm, first degree block, right bundle branch block, right axis deviation and left posterior fascicular block, and Q-waves in  $V_1$  through  $V_4$  with loss of anterior forces suggesting anterior infarction. LBBB, not present, generally conceals electrocardiographic findings of infarction. Temporary pacing would be indicated in the face of acute infarction and RBBB alone or RBBB with LPFB because of the high incidence of progression to complete AV block. Even with temporary pacing, roughly one-half the patients will expire, often of myocardial failure. Thus 1) and 4) are true while 2), 3), and 5) are false.



## MEDICINE IN THE NEWS



### NEW COUNCILOR OF THE ARKANSAS MEDICAL SOCIETY



**CAL R. SANDERS, M.D.**  
Camden  
Councilor, Fifth District

Dr. Cal Sanders was elected councilor for the fifth district during the recent annual meeting of the Arkansas Medical Society. The counties in Dr. Sanders' district are: Bradley, Calhoun, Cleveland, Columbia, Dallas, Ouachita and Union.

Dr. Sanders was born in Stephens, Arkansas, and was graduated from school there. In 1962, he received his B.S. degree from Ouachita Baptist University in Arkadelphia. He worked for three years as a chemist at Union Carbide in Texas City, Texas.

In 1969, Dr. Sanders was graduated from the University of Arkansas College of Medicine. His internship was served at St. Vincent Hospital in Little Rock. Dr. Sanders is board certified by the American Academy of Family Physicians.

Before being elected as councilor of his district, Dr. Sanders served as Ouachita County's delegate to the Arkansas Medical Society. He has recently been appointed as Chief of Staff to Ouachita County Hospital and is associated with Ouachita Clinic in Camden.

Dr. Sanders' hobbies consist of bird hunting, fishing, camping, jogging, dirt bike riding and racquet ball. He is a member of the First Baptist Church in Camden.

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### THE MONTH IN WASHINGTON

Congressional appropriations committees are considering the Administration's proposals for a further \$500 million reduction in health program funding.

The cuts in an already Spartan health budget, made as part of President Carter's all-out drive to balance the budget to fight inflation, normally would receive short shrift in Congress where health usually is treated generously. However, this year promises to be different as Congress generally shares the Administration's concern about budget deficits.

In addition to the cuts for the fiscal year 1981 starting next October, the Administration is seeking reductions in appropriations for the current year and rescissions of appropriations already approved by Congress. Congress was asked to delay action on the \$300 million Child Health Assurance Program, originally slated to take effect next fiscal year, and on legislation expanding Medicare and Medicaid benefits. There was even a six-month postponement, until 1983, of the Administration's National Health Insurance plan.

There was little policy evident in the indiscriminate, down-the-line budget paring of health programs. Disease prevention, mental health, alcoholism, and the National Health Service Corps, not to mention the Child Health Assurance Program, had all been Administration favorites.

Proposed Health, Education and Welfare cuts are as follows:

- Health Services Administration — cut by \$117 million, including \$47 million for the National Health Service Corps, \$21 million for community health centers, and \$15 million for family planning.
- Center for Disease Control — cut by \$98 mil-

lion, led by \$52 million for health incentive grants.

- National Institutes of Health — cut by \$91 million plus another \$41 million from this year's appropriation.
- National Cancer Institute — cut by \$43 million.
- National Heart, Blood and Lung Institute — cut by \$15.6 million.
- Alcohol, Drug Abuse and Mental Health Administration — cut by \$102 million for state formula grants.
- Health Resources Administration — cut by \$73 million including \$38 million for local health planning.

\* \* \* \* \*

The AMA has told the Congress that "In these times of escalating costs and growing demands for increased federal financial support in governmental programs, it is more important than ever that the Congress provide the leadership necessary to establish priorities for the expenditures of finite federal funds."

In testimony before a subcommittee of the House Committee on Appropriations, the AMA warned that it was essential that all sectors of the economy cooperate.

"In this connection the medical profession has undertaken an examination of all aspects of health care delivery in order to constrain rising costs and conserve the public and private health care dollar without sacrificing the quality or availability of health care services," the AMA said. "Through the 'Voluntary Effort' the medical profession and other organizations have created an affirmative and positive program demonstrating the concern of the private sector in controlling hospital expenditures and seeking to ameliorate the impact of inflation on health care costs. This program has proven itself effective. Physicians, too, in response to an AMA call for moderated increases in physician fees, have responded effectively, with physician fee increases being below the 'all items' portion of the Consumer Price Index for the past two years."

In conclusion, the AMA testified that "While we recognize that governmental priorities must be established and that certain programs must be cut, we believe that other programs, including those we have discussed with you, should be strongly supported if the health needs of the American people are to be met. We urge this Committee to consider carefully any reductions

in federal funding that might compromise the health of the American people."

\* \* \* \* \*

The AMA has said no to a federal proposal that physicians be asked to limit their fee increases to 6.5 percent this year. AMA Executive Vice President James H. Sammons, M.D., has told government officials that the overall rate of inflation is running at about 18 percent and that Wage Guideline limits have been set at from 7.5 percent to 9 percent.

The Health and Human Services Department (the new name for the old HEW Department) and the Council on Wage and Price Stability (COWPS) have been meeting with leaders of the health providers in an attempt to set voluntary fee and price limits.

Dr. Sammons said the AMA will continue to urge individual physicians to exercise restraint, a policy that has resulted over the past two years in a rate of increase well behind the Consumer Price Index for the rest of the economy. In 1978 the CPI was 9 percent; physicians' fee increases, 8.1 percent. Last year the figures were 13.3 percent and 9.4 percent, respectively.

The talks with the private sector organizations making up the VE mark a distinct change in official attitude. Former HEW Secretary Joseph Califano did not recognize the VE as a legitimate effort to hold down inflation and made it the subject of snide attacks. The present Secretary Patricia Harris has inaugurated a policy of working with the private sector and refraining from name-calling.

\* \* \* \* \*

An economic recession will see more people visiting physicians and hospitals, the AMA has cautioned the Administration.

"As unemployment levels rise, an increasing number of individuals will not have to take time off from their jobs in order to obtain medical care," noted Lowell Steen, M.D., Chairman of the AMA Board of Trustees. "In addition, experience in past recessions indicates that recently unemployed workers will try to obtain medical services before their work-related health insurance benefits expire."

Testifying before the Administration's Price Advisory Committee, Dr. Steen said that the projected recession thus could increase demand for medical services and force practice costs to rise.

Another factor to bear in mind, according to



the AMA official, is that health care policy makers — including the members of the Voluntary Effort — have adopted the goal of reducing hospital utilization. "To the extent that this goal is met, it is expected that the demand for care in an ambulatory setting will increase, which, in turn, may lead to price increases for services rendered in physicians' offices."

The physicians of the nation have helped write "a real success story for voluntary restraint," said Dr. Steen, the "Physicians' Services" price index increased less rapidly than the "All-items" index of the Consumer Price Index in both 1978 and 1979 (see story above for figures).

Dr. Steen said the AMA's policies and programs represent a groundswell of physician concern for the costs faced by their own patients.

Through the years, he noted, the AMA has urged physicians to seek the most economical form of treatment consistent with good care; it has encouraged physician-patient discussion of fees prior to treatment; and it has supported voluntary health planning programs at the community level to assure appropriate distribution of health care resources.

Dr. Steen concluded his testimony before the Price Advisory Committee with details of eight current AMA cost containment programs.

\* \* \* \* \*

The Administration has told Congress there will be plenty of physicians around in the 1980s. The bright outlook on the physician supply happens to coincide with the Administration's desire to slash funding for medical education. Hearings are underway in Congress on extending the medical manpower laws.

The report to Congress said the number of active United States physicians increased more than 17 percent from 323,000 in 1970 to 379,000 in 1978. The "new" publication, a report to the President and Congress on the Status of Health Professions Personnel in the United States (1980), also cited increases during the period in the numbers of active practitioners in other health professions: Dentistry up 19 percent from 102,000 to 121,000; Optometrists, 15 percent, from 18,400 to 21,200; Pharmacists, 23 percent from 109,600 to 134,600; Podiatrists, 14 percent, from 7,100 to 8,100; and Veterinarians, 32 percent, from 25,000 to 34,200.

The HEW Department which issued a similar report last year, said projections for the 1980s in-

dicate that the supply of physicians "probably will be adequate to meet the nation's needs and could actually exceed requirements. By 1990 physician requirements are predicted to range from 553,000 to 596,000 compared to an anticipated supply of 600,000."

The report points out that the projected increase in physician supply does not solve geographic distribution problems.

"To solve geographic inequities will require some leeway in the supply to encourage potentially excess health personnel to locate in areas that would not otherwise get the manpower required," according to the report.

The report also said the anticipated increase in the supply of U.S.-trained physicians should lessen a previous reliance on Foreign Medical Graduates who accounted for 11 percent of physicians in 1963 and 20 percent in 1977.

There have been substantial increases in the numbers of women and minority students pursuing health careers, but there is no health profession in which the percentage of practitioners or the level of enrollment of minorities and women is equal to their representation in the civilian population, according to the report.

\* \* \* \* \*

The AMA has opposed as unnecessary a pending bill in the House titled the "Privacy of Medical Information Act" (HR 5935).

Appearing before Ways and Means subcommittee on Health, spokesman Frederick W. Ackerman, M.D., Chairman of the AMA Council on Legislation, said that while the Association shared with the Congress its deep concerns over increasing threats to the confidentiality of medical records and the erosion of privacy of patients, it was seeking appropriate state legislative solutions to the problems, while at the same time working to educate physicians and others to be sensitive to these issues.

"Basic to our objection to enactment of the bill is our view that there is no need for comprehensive federal legislation," Dr. Ackerman said. "Any deficiencies in the present system relating to confidentiality of medical records do not justify enactment of federal legislation with the morass of regulation assuredly to follow.

"We believe that the states have shown an increased willingness and ability to respond to these problems. Congress should encourage these activities, not supplant them. Accordingly, we urge

the Congress not to adopt comprehensive federal legislation, but to limit its activities to appropriate federal areas in which the states cannot act."

\* \* \* \* \*

Legislation in another area to protect medical peer review records maintained by the Veterans' Administration from public release was backed, however, by the AMA. Confidentiality is critical

to the success of any peer review program, the AMA said in support of an amendment of Sen. Herman Talmadge (D-GA) to the VA Physicians Pay bill (S. 2534).

The AMA noted it has consistently supported congressional efforts in assuring the confidentiality of records of Professional Standards Review Organizations.



# keeping up

## Category 1 Continuing Medical Education Programs Available in Arkansas

### AMERICAN COLLEGE OF PHYSICIANS — MKSAP REVIEW COURSE

Presented by Peter O. Kohler, M.D., *August 25-28, 8:00 a.m. to 5:00 p.m.*, Hilton Inn, Little Rock. Thirty hours Category I credit. Registration fee: ACP Associates, \$100; ACP Members, FACP, Residents and Research Fellows, \$200; Non-members, \$300.

#### CONFERENCES

##### FRONTIERS IN PSYCHIATRY

Presented by Keong-Chye Cheah, M.D., co-sponsored by Mid-Continent Psychiatry Association, Arkansas Psychiatry Society and UAMSC, *8:30 a.m. to 1:00 p.m., September 12-14, 1980*, Indian Rock Resort, Fairfield Bay. Eight hours Category I credit. Registration fee: \$50 for Mid-Continent and Arkansas Psychiatry members, spouse or family and Psychiatry residents; \$75 for others.

### GERIATRICS FOR THE FAMILY PHYSICIAN

Presented by Ben N. Saltzman, M.D., *September 13, 1980*, time undetermined, Education II Building, UAMSC. Seven hours Category I credit. Registration fee \$40. Sponsored by UAMSC.

### ARKANSAS ACADEMY OF OPHTHALMOLOGY— ANNUAL MEETING

Presented by James Landers, M.D., *September 19-20, 1980*, time undetermined, Red Apple Inn, Heber Springs. Nine hours Category I credit. Registration fee \$50.

### THE AGING GUT

Presented by E. Clinton Texter, M.D., Professor of Medicine, University of Arkansas for Medical Sciences, *September 25-26, 1980*, time undetermined, Little Rock Hilton Inn. Sixteen hours Category I credit. Registration fee \$120; \$40 for VA sponsored physicians. Sponsored by UAMSC.

#### RECURRING EDUCATION PROGRAMS

Unless otherwise indicated, programs are for one to one and one-half hours Category I credit.

##### FAYETTEVILLE — AHEC-NW

*Medicine Teaching Conference*, 7:30 a.m. each Saturday, Washington Regional Medical Center.

##### FAYETTEVILLE — VA MEDICAL CENTER

*Radiology Conference*, August 5th and 20th and September 2nd and 17th, 3:00 p.m., Conference Room.

*Pathology Conference*, August 19th, 3:00 p.m., and September 9th, 1:30 p.m., Conference Room.

*Mortality Conference*, August 14th and September 11th, 3:00 p.m., Conference Room.

*Pulmonary Conference*, August (check for date and time).

##### FORT SMITH — AHEC

*Tumor Conference*, every Tuesday, 12:00 noon, Fourth Floor Conference Room, Sparks Regional Medical Center.

As organizations accredited for continuing medical education by the Liaison Committee on Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.



### JONESBORO — ST. BERNARD'S REGIONAL MEDICAL CENTER

*Interesting Cases*, second and fourth Tuesday, 12:00 noon, Dietary Conference Room. Sponsored by AHEC-NE.  
*Tumor Conference*, third Tuesday, 12:00 noon, Dietary Conference Room. Sponsored by AHEC-NE.  
*Medical Lecture Series*, each Friday except third Friday, 11:50 a.m., Dietary Conference Room. Sponsored by AHEC-NE.  
*Chest Conference*, third Friday, 11:50 a.m., Dietary Conference Room. Sponsored by AHEC-NE.

### LITTLE ROCK — BAPTIST MEDICAL CENTER

*Pulmonary Care Conference*, each Tuesday, 12:00 noon to 1:00 p.m., Dining Room #4.  
*Central Arkansas Primary Care Conference*, September 9, 7:00 p.m. to 9:00 p.m., Auditorium. Two hours Category I credit.  
*Cardiopulmonary Resuscitation Course*, second Wednesday, 6:00 p.m. to midnight, Human Resource Development Area. Six hours Category I credit.  
*Emergency Room Medicine Conference*, second and fourth Wednesday, 12:00 noon to 1:00 p.m., Conference Room #1.  
*Morbidity and Mortality Conference*, first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.  
*Surgery Conference*, each Thursday except first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.

### LITTLE ROCK — ST. VINCENT INFIRMARY

*Interhospital GI Problems Conference*, first Monday, 6:00 p.m. to 7:30 p.m., Room E155, Education Wing.  
*Pediatric Conference*, first and third Monday, 12:30 p.m. to 1:30 p.m., Room E159, Education Wing.  
*Interhospital Urology Grand Rounds*, first Tuesday, 5:30 p.m. to 6:30 p.m., Room E159, Education Wing.  
*Peripheral Vascular Disease Conference*, third Tuesday, 6:00 p.m. to 7:00 p.m., Room E155, Education Wing.  
*Neuropathology Conference*, third Tuesday, 5:00 p.m. to 6:00 p.m., Room S1169, Laboratory.  
*Pulmonary Conference*, first and third Thursday, 12:00 noon to 1:00 p.m., Room E159, Education Wing.  
*Cardiology Conference*, second and fourth Thursday, 12:00 noon to 1:00 p.m., Room E159, Education Wing.

### LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

*Internal Medicine Grand Rounds*, each Tuesday, 8:00 a.m. to 9:00 a.m., Education I Auditorium.  
*Neuroradiology Conference*, each Wednesday, 4:00 p.m. to 5:00 p.m., Department of Radiology Conference Room.  
*Radiology Continuing Education Lecture Series*, two Wednesdays each month, 6:00 p.m. to 7:30 p.m., Department of Radiology Conference Room.  
*Categorical Course in Radiology*, each weekday except Wednesday, 4:15 p.m. to 5:00 p.m.; Wednesday, 5:00 p.m. to 5:45 p.m., Department of Radiology Conference Room.

### POCAHONTAS

*Medical Lecture Series*, third Tuesday in August, 7:30 p.m., Randolph County Hospital. Sponsored by AHEC-NE.

### WALNUT RIDGE

*Medical Lecture Series*, third Tuesday in September, 7:30 p.m., Lawrence Memorial Hospital. Sponsored by AHEC-NE.



## PERSONAL AND NEWS ITEMS

### Scholarship

Drs. Thomas E. Bell and Thomas R. Hoberock of Harrison have donated a nursing scholarship to North Arkansas Community College.

### Pediatric Officers

At the May 1980 meeting of the Arkansas Chapter of the American Academy of Pediatrics, the following officers were elected for a term of three years: Dr. John Trieschmann of Hot Springs, chapter chairman; Dr. Horace Green of Pine Bluff, alternate chapter chairman; Dr. Sue Keathley of Little Rock, secretary-treasurer. Drs. T. E. Townsend of Pine Bluff, Jim Sykes of El Dorado

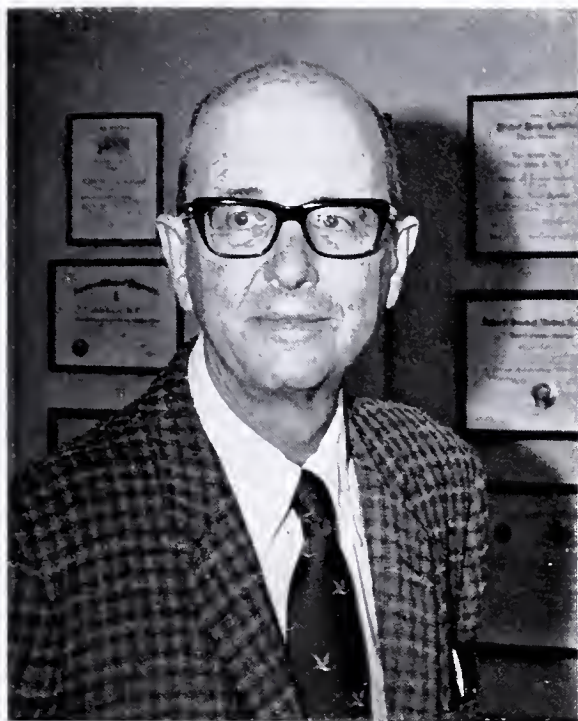
and Margaret Harrison of Hot Springs were elected as board members.

### Physician Moves to Paris

Dr. Wayne Enns, formerly of Canada, has joined Drs. Pierre Boissinot and Guy Ulrich of Paris in the General Practice of Medicine.

### Commissioner of Mental Health

Dr. James L. Thomas, Little Rock, has been chosen as the State Mental Health Commissioner. Dr. Thomas had been serving as medical director of the State Hospital at Little Rock before being appointed Commissioner.



**DR. ALFRED KAHN, JR.**  
Little Rock

#### **Dr. Kahn Receives Award**

Dr. Alfred Kahn, Jr., editor of the Journal of the Arkansas Medical Society, was the 1980 recipient of the distinguished alumnus award, the Shield of the Trojan, from the University of Arkansas at Little Rock. Dr. Kahn was presented the award for his outstanding contributions to Society.

#### **Hall of Fame**

During the recent annual meeting of the American-Canadian Lung Association, Dr. Ben Saltzman of Little Rock was elected to the American Lung Association's 75th Anniversary Hall of Fame.

Dr. Saltzman was chosen because of his years of work with the Arkansas Lung Association and its predecessor, the Tuberculosis Association.

#### **Dr. Jackson Honored**

Dr. Jabez F. Jackson, Sr., of Newport, was presented the Distinguished Alumnus 1980 award by the Board of Trustees and Alumni Council of Arkansas College. Dr. Jackson is a 1930 graduate of the college.

#### **Plaque Presented to Dr. Lee**

Dr. W. J. Lee of Stamps was recently honored by the Board of Governors of the Lafayette County Memorial Hospital for his service to the hospital. Dr. Lee has retired from the practice of medicine.



**DR. ROBERT WATSON**  
Little Rock

#### **Library Room Dedicated**

The History of Medicine Room in the University of Arkansas Medical Sciences Campus Library has been dedicated to Dr. Robert Watson of Little Rock. The "Robert Watson History of Medicine Room" will contain rare books and manuscripts, general works on the history of medicine and donated collections pertaining to medicine in Arkansas.

Dr. Watson's six partners in Neurological Surgery Associates donated funds in his honor to furnish the room.

Dr. Watson was honored because of his lifelong interest in developing his alma mater and in the broad history of medicine in Arkansas.

#### **Recognition Award**

Dr. Bill Livingston, 1979 Chief of Staff at Ouachita County Hospital, was recently honored with a recognition award for his work as Chief of Staff.

#### **Psychiatrists Elect Officers**

The Arkansas Psychiatric Society has elected officers as follows: Dr. Keong-Chye Cheah of North Little Rock, president; Dr. Robert R. Matthews, president-elect; Dr. Emile Eckart, secretary, and Dr. Roy R. Ragsdill, Jr., treasurer, all of Little Rock.



### Physician Locates

Dr. Wesley J. Ashabrunner has joined Dr. Nathan Poff in Heber Springs for the General Practice of Medicine.

### Dr. Taylor Speaks

Dr. Charles Taylor of Batesville recently addressed the Batesville Kiwanis Club on the causes and treatment of hypertension.

### Posthumous Award

A posthumous award by the University of Arkansas College of Medicine in May honored Dr. W. Mage Honeycutt. "The College of Medicine

1980 Distinguished Service Award" gave recognition to the work of Dr. Honeycutt as a teacher, physician and clinical mytologist. Dr. Honeycutt had been a faculty member at the University for 17 years.

Dr. Thomas A. Bruce, Dean of the Medical College, made the presentation to Mrs. Honeycutt during the recent Honors Convocation.

### Caduceus Club

Dr. Paul Wallick of Monticello was installed as president of the Caduceus Club of the University of Arkansas College of Medicine at the Twelfth Annual Alumni Weekend.



## NEW MEMBERS

### Dr. James E. Griffin

Dr. James E. Griffin has recently joined the Garland County Medical Society. He was born in El Dorado.

After receiving a B.S. from Brigham Young University, Provo, Utah, in 1971, Dr. Griffin attended the University of Arkansas College of Medicine. He received his M.D. degree in 1975.

Dr. Griffin served his internship and residency in Otolaryngology at Parkland Memorial Hospital, a hospital with the University of Texas Southwestern Medical School in Dallas.

Dr. Griffin practices Otolaryngology at 100 Ridgeway Boulevard in Hot Springs.

### Dr. Leon M. Waddy, Jr.

The Lee County Medical Society has added Dr. Leon M. Waddy, Jr., to its membership roll. He is a native of Pittsburgh, Pennsylvania.

During a two-year service in the United States

Army, Dr. Waddy was a member of the Army Band stationed at Fort Gordon, Georgia.

Dr. Waddy was graduated from Howard University in Washington, D. C., with a B.A. degree and was granted his medical degree by the Meharry Medical College School of Medicine in Nashville, Tennessee, in 1978. He served his internship at Hurley Medical Center in Flint, Michigan.

Dr. Waddy practices General Medicine at 530 West Atkins Boulevard in Marianna.

### Dr. Maurice L. Stephens

A native of Texarkana, Arkansas, Dr. Maurice Stephens has joined the Polk County Medical Society.

Dr. Stephens' pre-med education was at Baylor University, Waco, Texas; University of Houston, Texas; and Herman Hospital School of Medical Technology in Houston. He received his M.D. at the University of Arkansas College of Medicine in 1972.

After an internship at St. Vincent Infirmary in Little Rock, he practiced in Clarksville before moving to Mena in 1974.

Dr. Stephens practices Family Medicine in Mena.

### Dr. William F. Dudding

Dr. William F. Dudding, a native of Topeka, Kansas, has become a member of the Sebastian County Medical Society.

Dr. Dudding received his B.S. from Washburn

University in Topeka and an M.S. from the University of Arkansas. His M.D. was granted by the University of Arkansas College of Medicine. He served his residency in Family Practice in the AHEC program at Fort Smith.

Before opening his private practice, Dr. Dudding practiced Emergency Medicine at St. Edwards Hospital in Fort Smith. A board certified Family Physician, Dr. Dudding practices at 3120

Jenny Lind in Fort Smith.

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The Sebastian County Medical Society has four new resident members. They are in the Family Practice Residency program in Fort Smith:

Dr. William G. Barron  
Dr. Stephen C. Golden  
Dr. Jerry L. Russell  
Dr. Gordon W. McCraw



## RESOLUTIONS



**C. Frank Dodson, Jr., M.D.**

WHEREAS, the recent untimely death of our colleague, C. Frank Dodson, Jr., M.D., has caused the members of this organization deepest sorrow; and

WHEREAS, the Society regrets the loss at such an early age of one of its members whose contributions to the betterment of the profession would have been most significant; and

WHEREAS, Dr. Dodson had in his brief time as a member of organized medicine achieved enviable recognition for his skill in his chosen specialty and for his contribution to medical literature:

**BE IT THEREFORE RESOLVED:**

THAT, this resolution be adopted as an expression of appreciation for his contributions to the profession; and

THAT, a copy of this resolution be forwarded to Dr. Dodson's family to express our sincere sympathy; and

THAT, a copy be forwarded to the Journal of the Arkansas Medical Society for publication.

By Direction of the Memorials Committee:  
T. Duel Brown, M.D., Chairman  
Henry Hollenberg, M.D.  
Robert Watson, M.D.  
Pulaski County Medical Society

## THINGS



**TO  
COME**

**July 31 - August 2, 1980**

Arkansas Academy of Family Physicians Thirty-Third Annual Scientific Assembly. Camelot Inn/Convention Center, Little Rock. Registration fees are \$35 for members, \$45 for non-members, and \$5 for residents; there is no charge to students. The program, as outlined below, is acceptable for 11 prescribed hours.

*Thursday, July 31*

12:00 noon

Board of Directors Luncheon

3:00 p.m.

Member and Guest Registration

6:30 p.m.

Cocktail Party, Camelot Inn

*Friday, August 1*

8:00 a.m.

"The Diagnosis and Treatment of Headache," Seymore Diamond, M.D., Diamond Headache Clinic, Chicago

12:00 noon

Business Luncheon

1:30 p.m.

"Adolescent Sexuality and Its Problems," W. A. Daniel, Jr., M.D., Professor of Pediatrics, Chief of Adolescent Medicine, University of Birmingham, Alabama

3:30 p.m.

"Colon Cancer — Prevention and Early Diag-



nosis," Walter L. Peterson, M.D., Assistant Chief, Gastroenterology, Dallas VA Medical Center, Texas

7:00 p.m.

Cocktail Party, Cajun's Wharf

*Saturday, August 2*

7:00 a.m.

Razorback Breakfast — Dave Woodman, Speaker

8:30 a.m.

"Exercise Prescribing," Sheppard Odom, M.D., President of Montgomery Medical Center, Alabama

11:00 a.m.

"Medical Professional Liability," W. A. Eldredge, Jr., Attorney-at-Law, Friday, Eldredge & Clark Law Firm, Little Rock

12:00 noon

Installation of Officers' Luncheon — Guest Speaker, John S. Derryberry, M.D., President, American Academy of Family Physicians

2:00 p.m.

"Narcolepsy, Sleep Apnea, and Other Sleep Disorders," "Sleep Physiology, Insomnia and Sleeping Pills," William C. Orr, Ph.D., Adjunct Associate Professor Psychiatry and Behavioral Sciences, University of Oklahoma Health Sciences Center; Director, Sleep Disorders Center, Presbyterian Hospital, Oklahoma City

For advance registration or further information, contact: Mrs. Alta Good, Executive Secretary, Arkansas Academy of Family Physicians, Post Office Box 5721, Brady Station, Little Rock 72215.

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#### AMA Regional Scientific Meetings

Hyannis (Cape Cod), Massachusetts — Dunfey's Resort — September 12-14.

Chicago, Illinois — Chicago Marriott — September 19-21.

Huron, Ohio — Sawmill Creek Lodge — October 17-19.

Philadelphia, Pennsylvania — Fairmont Hotel — October 24-26.

New York, New York — New York Hyatt — November 14-16.

San Antonio, Texas — San Antonio Convention Center (with Southern Medical Association) — November 16-19.

For additional information, contact Gale Jewett, Continuing Medical Studies, AMA, 535 North Dearborn, Chicago, Illinois 60610, phone (312) 751-6570.

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#### September 27-28

American Medical Association Theme Meeting. "Drugs in Medical Practice, 1981: A Critical Review and Workshops." Crown Center Hotel, Kansas City, Missouri. Co-sponsored by the American Society of Clinical Pharmacology and Therapeutics. For further information, contact Gale Jewett, Continuing Medical Studies, American Medical Association, 535 North Dearborn, Chicago, Illinois 60610, phone (312) 751-6570.

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#### October 6-10, 1980

Basic Science in Obstetrics and Gynecology. Sponsored by The University of Texas Medical School, Department of Pathology, in Houston. Approved for 40 hours of AMA Category I credit. Fee: \$350 or \$75 per day. For further information, contact: Sarah J. Clegg, Office of Continuing Education, The University of Texas Health Science Center at Houston, Medical School, Post Office Box 20708, Houston 77025.

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#### March 2-6, 1981

Seventieth Annual Meeting of the United States-Canadian Division of the International Academy of Pathology. Palmer House, Chicago, Illinois. Further information about the meeting and courses offered may be obtained from Dr. Nathan Kaufman, Secretary-Treasurer, United States-Canadian Division of the International Academy of Pathology, 1003 Chafee Avenue, Augusta, Georgia 30904, phone (404) 724-2973.

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#### **A SPECIAL THANKS TO AMELIA**

The Dr. and Mrs. W. R. Brooksher Student Loan Fund was established by the Council of the Arkansas Medical Society in 1958. The fund provides financial assistance to students in training for medical technologist, degree X-ray technician, degree physical therapist, degree occupational therapist, medical social worker, and other para-medical specialists.

The fund has been handled by the Arkansas Medical Society Auxiliary. Since the fund was established, Mrs. Art (Amelia) Martin of Fort Smith has served as chairman of the Auxiliary committee responsible for the fund. Since the fund is available to a wide range of students, there

is an abundance of paperwork and research. Amelia has diligently and faithfully done the work and kept all records. This year, she passes the responsibility on to another.

Amelia has been a member of the Medical Auxiliary for many years and served in many capacities on county, state, southern and national levels, including president of both the Sebastian County Medical Society Auxiliary and the Arkansas Medical Society Auxiliary. In 1971, she was the recipient of the first "Doctor's Wife of the Year" award. The Arkansas Auxiliary owes much to Amelia and would like to take this opportunity to say a very special "thank you."

The new chairman for the Brooksher Student Loan Fund will be Mrs. Carlos (Eulalia) Araoz of Little Rock. She works in the para-medical field as a cytological technician at the Veterans Hospital. She is a past president of the Central Arkansas Association of Laboratory Scientists, is present secretary of the State Audubon Society and is president-elect of the Pulaski County Chapter of Medical Assistants.





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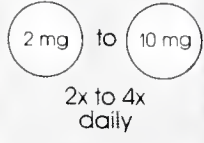
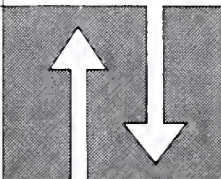


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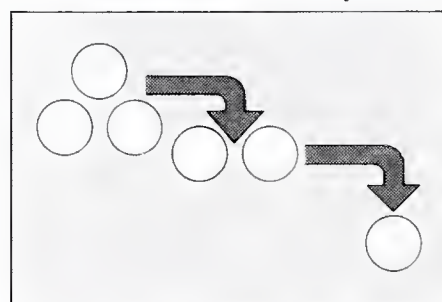
## Evaluating progress toward therapeutic goals

SET GOALS						
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

At the beginning of therapy it is now common practice for both physician and patient to establish treatment goals and to estimate the amount of time needed to achieve them. Then the patient knows what to expect and when to expect it.

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**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed, drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported, should these occur, discontinue drug. Isolated reports of neutropenia, jaundice, periodic blood counts and liver function tests advisable during long-term therapy.

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## Arkansas' High Risk Registry: Early Identification of Infant Deafness

Joe B. Colclasure, M.D., H. A. Ted Bailey, Jr., M.D.,  
Sharon S. Graham, M.A., and Michael E. Winston, Ph.D.\*

### ABSTRACT:

- 1) Auditory-deprived neural pathways are much less receptive to learning language after the first two years of life.
- 2) The early identification of children with serious hearing loss is thus critical to the development of speech and language.
- 3) New objective tests permit early diagnosis of deafness as early as three months of age.
- 4) With intensive early aural habilitation, profoundly deaf persons may more fully participate in a hearing society.

"The Problems of Deafness are deeper and more complex, if not more important, than those of blindness. Deafness is a much worse misfortune. For it means the loss of the most vital stimulus—the sound of the voice that brings language, sets thoughts astir and keeps us in the intellectual company of man."—Helen Keller

Each year, approximately 5000 profoundly deaf infants, (one in every 2000 births) are born in the United States. The incidence of profound deafness increases to one in every 1200 by school age, as some childhood hearing losses occur after the neonatal period due to both progressive-genetic causes and acquired diseases. Based on population growth, it is postulated that 600,000 children may be born deaf or with serious loss in the next 20 years. Currently over 50,000 children are enrolled in schools or classes for the deaf; the 1979 enrollment at the Arkansas School for the Deaf (grades kindergarten thru 12) is 300 children. The cost to society for the care and education of these children with hearing losses is high; however, the cost to the deaf individual—communicatively, socially,

economically and psychologically, in terms of diminished personal fulfillment, is incalculable.

The ramifications of early hearing loss have far-reaching effects throughout the life of the deaf individual. All of the potential problems have the same source: the inability to learn and utilize our language system effectively with other members of society. These difficulties are greatly intensified when a deaf child is not identified in the first two years of life.

The need for early auditory habilitation is supported by neurological research findings. Language acquisition is a time-locked function, physiologically programmed during the first two years of life. The first year has been referred to as the period of "readiness to listen"; the second year, the period of "readiness to speak".<sup>1</sup> Neurophysiological maturation studies<sup>2,3</sup> indicate that auditory nerve fibers continue to undergo myelination during the first two years of life. This myelination period is the optimal physiological time for central structures to initiate integration and interpretation of auditory information. The central processing patterns necessary for language development are less effectively established after this time. Therefore, the longer the auditory stimulation is delayed, the greater the difficulty of language acquisition and the greater the magnitude of permanent deafness. Early identification and habilitation thus are *critical* to the potential development of each individual with serious hearing loss.

Without sound stimulation and the acquisition of language during the normal developmental period, the child suffers social, psychological and educational complications. Most of the social mores of a culture are transmitted through communication with family and peers. Through

\*The Ear & Nose-Throat Clinic, P.A., 1200 Medical Towers Building, Little Rock, Arkansas 72205.



hearing and speech, the child learns how to interact with peers and adults in a "normal" manner. Psychologically, deafness creates a barrier between parent and child. Such complications obviously preclude the development of a normal self-image. Educationally, the deaf child is four to six years delayed in general academic skills.<sup>4,5,6</sup> Reading skills show the greatest scholastic delay, as evidenced by a national survey,<sup>7</sup> which revealed a reading level in the 12th grade deaf students equivalent to that averaged by normal hearing 4th graders. Without the foundation acquired through a normal language development period, a deaf child is rarely able to match academic skills with his normal hearing peers.

These effects in varying degrees may also be noted in the three million children in the United States who have moderate or mild hearing losses. There is accumulating evidence that mild losses may produce a lag in language development and permanent learning difficulties;<sup>8</sup> these may result from partial yet significant central auditory deprivation.

Early identification is essential to initiating successful management of serious hearing loss in childhood. The time to locate these children is in infancy. Currently, there are two screening approaches: 1) Presentation of a loud sound stimulus while an examiner observes the infant for a response, or a computerized mechanism records a response (movement, eye blink, change in respiration, etc.), and 2) a medical history registration of infants "at risk" for deafness based on the odds of occurrence in conjunction with precipitating or associated factors. Such a risk register presupposes that the major causes for neonatal deafness are known; the causes of approximately 70% of neonatal deafness have been identified.<sup>9</sup> Studies in other states have shown the register to be more effective and less expensive than other screening techniques. Recently, a pilot program\*\* has begun in Arkansas to establish a High Risk Register for deafness. This will be carried out through hospital nurseries in six counties. Infants with any of the following factors will be registered:

1. Familial history of deafness (prior to age 50).
2. Rubella or other intrauterine non-bacterial infections.

3. Maxillo-facial anomalies.
4. Birthweight of less than 1500 grams.
5. Abnormal bilirubin level.
6. Hypoxia.
7. Sepsis or fever.
8. APGAR score of less than 5.

Infants with any of the above factors have 35 times more chance for being hearing impaired than "normal" neonates.<sup>9</sup> The attending physician will then be notified that the infant has been registered.

Volunteers, trained by the State Department of Health, will contact the parents of the high risk register children at three and six months following birth. Screening information will be obtained concerning auditory developmental milestones. If a hearing problem is indicated or suspected, a referral for otolaryngological and audiological evaluation will be made. Follow-up contacts will be made at 12 and 24 months, or until the child has been evaluated. Record keeping will be managed through the Arkansas Department of Health.

The ability to assess hearing loss in infants and young children has improved dramatically in recent years. With the advent of objective procedures such as impedance audiometry and brain stem electric response audiometry, hearing assessment in infants and young children has become much more precise. Utilizing brain stem electric response audiometry, hearing threshold levels can be assessed through the measurement of involuntary functions which require no active participation or cooperation on the part of the child.

Based on the definitive information gained, children can be fitted with appropriate hearing aids as early as six months of age. Once amplification has been initiated, involved professionals can design an individual educational program for the habilitation of each child. When habilitative measures are instituted in the first six to 18 months of life, much can also be done by informed parents to substantially reduce the communicative, social, psychological and educational problems which accompany the loss of hearing. With this early identification process, the door is opened for the deaf child to enter our "hearing" society, thereby increasing the potential opportunities for the quality of life to which every child is entitled.

\*\*A volunteer effort coordinated through the State Department of Health and the Office of the Governor, with support from interested civic organizations.

### SUMMARY

1) A critical neurophysiological readiness period exists for auditory processing and speech development during the first two years of life. Potentially permanent central impairments can result when sound stimulation and language learning do not begin during the first two years.

2) Early (first two years of life) auditory stimulation and language learning significantly decrease the communicative, social and psychological problems accompanying profound childhood deafness; thus, early identification is the key to maximize the use of hearing and speech.

3) The initiation of a High Risk Registry for deafness in Arkansas' hospital nurseries should provide early referral for neonates determined to be "at risk" for deafness.

4) Infants as young as three months of age can be objectively evaluated with brain stem electric response audiometry; specific levels of hearing loss can be measured without necessitating any cooperation by the child. Infants and children with significant hearing loss can be appropriately fitted with amplification and begin receiving essential sound stimulation during the critical language learning period.

5) Mild hearing loss may result in previously unsuspected language and learning disabilities, which may or may not be reversible.

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A RETROSPECTIVE INVESTIGATION OF THE  
RELATIONSHIP BETWEEN PERINATAL  
HEALTH CARE AND DEVELOPMENTAL  
DISABILITIES IN ARKANSAS

# Perinatal Health and Developmental Disabilities

William A. Schwab, Ph.D., and William D. Mangold, Ph.D.\*

## ACKNOWLEDGMENT

This paper is part of a larger inquiry into the determinants and consequences of perinatal and infant mortality in Arkansas. Funds for the data employed in this paper have been provided by grants from the National Foundation March of Dimes Grant #C-237 and the Arkansas Regional Perinatal Project. The analysis and conclusions contained in this report are strictly that of the authors and not those of the funding organizations.

## ABSTRACT

This study is a retrospective investigation into the relationship between perinatal health care and developmental disabilities in Arkansas. A panel composed of two neonatologists and one fetal/maternal health care specialist reviewed the medical, social, and psychological data of a sample of children suffering from a moderate to severe degree of mental retardation or other developmental disability. Each case was rated independently by panel members in terms of probable etiology of the disability and the likelihood that the disability could have been prevented with current medical technology. A review of the physicians' ratings show that in 26.5% of the cases, the subjects' disabilities were preventable. The maternal and perinatal health care received by these children and their mothers suggest that the maldistribution of perinatal health care services in the state contributed to the manifestation of these developmental disabilities. The possible benefits of a regionalized perinatal health care system in Arkansas are discussed.

## INTRODUCTION

Jane Smith, a school teacher, was 39 years old when she became pregnant for the first time. At 31 weeks into the pregnancy she developed severe hypertension. The specialized care she and her baby required was not readily available in the rural area where she lived, nor did her medical

insurance cover long-term obstetric care, and she could not afford such treatment.

Fortunately, Jane Smith lived in Missouri which has a state program designed to provide obstetric care for all pregnant women who have any of the six most common conditions that may predispose an infant to mental retardation: hemorrhage after 20 weeks' gestation, significant hypertension, severe diabetes mellitus, Rh-immunization, multiple pregnancy, and premature rupture of the membranes. She, therefore, was eligible for care at the state's expense and was admitted to the Truman Medical Center in Kansas City. When her hypertension did not improve during a two-week observation period, obstetricians at the center elected to perform a cesarean section. Although the infant boy weighed only 1300 grams and remained in a neonatal intensive care unit for some time, he did very well.<sup>a</sup>

This actual case history of a Missouri mother and her child demonstrates the benefits of a high-risk maternity and child care program to both the families of the children and the state. Without such a program, a child weighing less than 1500 grams at birth has approximately a 50% chance of developing severe mental retardation. In contrast, babies of similar low birth weight treated in Regional Neonatal Intensive Care Centers in Florida and other states have had only a 7% rate of mental retardation.<sup>1</sup>

In 1976 the Arkansas Regional Perinatal Program was established to improve maternal, obstetric, and newborn infant medical care in Arkansas. The primary objective of the Perinatal Program is to examine the feasibility of implementing a regionalized perinatal health care system in Arkansas similar to the Missouri system. The specialized health care facilities would be located strategically throughout the state at places accessible to the large rural and growing urban populations.

\*Department of Sociology, University of Arkansas, Fayetteville, Arkansas 72701.

### OBJECTIVES

One component of the Perinatal Program is an examination of the numbers and characteristics of Arkansans with health problems that are related to inadequate perinatal health care. The overall objective of this phase of the project is to document the personal, social, medical, and economic costs of inadequate perinatal health care in the state. A retrospective study of the etiology of various health conditions was undertaken to determine their perinatal implications. Specifically, the objectives of this phase of the project were to (1) estimate the number of Arkansans of pre-school age with specific physical and/or development disabilities; (2) identify the proportion of this population now receiving services for their disabilities from public and private agencies within the state; (3) draw a purposive sample of children with varying degrees of disability for a pilot study; (4) conduct a survey of the perinatal health, health care, and reproductive histories of the mothers of the children in the sample; (5) identify the etiology of the disability of this sample of children; (6) document the social and economic costs of inadequate perinatal health care for the state of Arkansas; and (7) assess the feasibility of expanding the pilot study into a statewide retrospective investigation of the relationship between inadequate perinatal health care and developmental disabilities.

### METHOD

Two broad categories of children were compared to estimate the effect of inadequate perinatal care on developmental disability. One group consisted of children whose development has been sufficiently impaired to require intensive and specialized care in the Conway Unit of the Arkansas Children's Colony. To reduce the variance in the type of evaluation a new resident receives before entering the Colony, the sample was restricted to those residents who entered the Colony during the 12-month period ending on July 15, 1978.

The second sample consisted of children whose developmental histories indicate a moderate level of disability. These children are now receiving services on an out-patient basis from (1) the Crippled Children Program administered through county health departments; (2) Arkansas' Department of Human Services, Division of Mental Retardation-Developmental Disability Services; and (3) special education programs conducted in

103 private centers in the state. A purposive sample was drawn from this population to assess the feasibility of a statewide retrospective investigation.

To obtain the relevant information linking perinatal health care to subsequent disabilities, a twofold approach was employed in studying these groups. First, the medical, social, and psychological histories of the children in the sample were abstracted from the files of the participating programs or agencies. These histories were reviewed by a panel of physicians composed of two neonatologists and one maternal health specialist who made an etiological evaluation and assigned each child to one of several categories indicating (1) the probability that the subject's condition was due to a problem during the perinatal period and (2) the likelihood that the availability of adequate perinatal care would have prevented the problem.

Second, an Infant and Maternal Health Care Survey was distributed to and completed by the mothers of the children in the survey. The survey instrument contained questions on (1) the incidence of specific medical, physical, and developmental disorders (e.g., epilepsy, diabetes, birth defects) in the families of the mother and father of the child, (2) the maternal and obstetric care and health of the mother during her pregnancy with the child in the survey, (3) the conditions during the birth of the child, (4) the health of the child during the neonatal and postneonatal periods, and (5) the mother's reproductive history.

The child's medical history and the panel of physicians' evaluation of the etiology of the child's disorders were matched with the mother's responses to the survey instrument to form a complete case record. An analysis of these data permitted inference on the link between maternal, obstetric, and neonatal health care and subsequent disabilities, as well as a check on the validity of the findings of the panel study.<sup>b</sup>

### THE PANEL STUDY

In July of 1978, a questionnaire, The Infant and Maternal Health Care Survey, was mailed to a sample of 118 mothers in the state with children who were at that time receiving custodial or out-patient services from the care providers in the study. Although the sample of mothers was a purposive one and not scientifically drawn, the women included in the sample were largely of lower socioeconomic status. This bias was un-



avoidable because of the maximum income restrictions under which many of the care providers operate. For example, only families with low to moderate incomes are eligible to receive services from the Crippled Children's Program. In general, individuals of lower socioeconomic status tend to ignore mailed questionnaires. Surprisingly, 51% of the women to whom questionnaires were mailed returned them by the cutoff date of September 1, 1978.

Starting in December of 1978 researchers visited the offices of the participating agencies, and, with the informed consent of the parents, began to abstract relevant medical, social, and psychological data from the children's files. The quality and quantity of these data varied considerably from agency to agency. In general, agencies providing long-term care to the severely/profoundly developmentally disabled had the most complete files. The Children's Colony and the private DD center had the most complete information on their clients, followed by MR-DDS and the Crippled Children's Program. These data combined with the information provided by mothers on the questionnaire formed a complete case record, the information base used by the panel of physicians to determine the possible etiology of each child's disorder.

The panel of physicians was composed of two neonatologists and one fetal/maternal health care specialist. Each panel member reviewed the cases independently, indicating on a rating form the

probable etiology of the developmental disability, the probable timing of the events causing the disability (e.g., prenatal, neonatal, postneonatal period), and the likelihood that the abnormal outcome could be prevented with current medical technology. For this last evaluation, each physician rated each case on a seven-point scale, from 1—present condition preventable with current medical technology, to 4—neutral, and 7—not preventable with current medical technology. A separate category was provided for cases in which data were insufficient for a rating.

Table 1 is a summary of the physicians' evaluations of the probability that the subjects' disability could be prevented with current medical technology. Of the 60 cases reviewed by the panel, in 16 or 26.5% the data were insufficient to make a determination of probable etiology. These cases were dropped from the study. The majority of these cases were from the Crippled Children's Program sample. For the remaining 44 cases, the physicians were in substantial agreement on etiology, probability of preventing the medical condition with current medical technology, and the timing of the medical event. In only 8% of the cases was there substantial difference between the ratings of any two members of the panel. More important is the fact that in the majority of these cases the differences in rating appear to be related closely to the medical specialty practiced by the panel member. For example, the maternal health care specialists rated the case of

**TABLE 1**  
**SUMMARY OF PANEL STUDY**  
Physician's Evaluation of the Etiology of Each Case  
as to Preventable or Not Preventable  
With Current Medical Technology

	Physicians' Ratings				Number of Respondents	Response Rate (%)
	Preventable	Not Preventable	Neutral	Insufficient Data		
Children's Colony (Conway Unit)	42% (14)	21% (7)	21% (7)	16% (5)	33	51% (65)
MRDDS-Outpatient (Region 1)	50% (2)	0% (0)	0% (0)	50% (2)	4	50% (8)
Crippled Children's Program	0% (0)	47% (8)	6% (0)	47% (8)	17	47% (26)
(Washington County)						
Private DD Center (Northwest Arkansas)	0% (0)	67% (4)	16.5% (1)	16.5% (1)	6	67% (9)
TOTAL	26.5% (16)	32% (19)	15% (8)	26.5% (16)	60	51% (118)

a high gravida, older, high risk mother who gave birth to a child with Down's syndrome as preventable with current medical technology,<sup>1</sup> whereas the other two members rated the same case as not preventable.<sup>7</sup> The panel member making the 1 rating commented that genetic counseling could have prevented this incident. If correction is made for these scoring differences there was less than 4% disagreement by panel members on the scoring of the cases.

A review of the physicians' ratings of the 44 cases shows that in 26.5% of the cases, the subject's developmental disability was rated as preventable with current medical technology. In 32% of the cases the panel believed that the congenital malformation or developmental disability was unanticipated and therefore not preventable. Finally, in 15% of the cases, the rating was neutral or the subjects' conditions may or may not have been preventable depending upon the training of the attending physician and the resources of the hospital in which the birth took place.

#### **Preventable Developmental Disability**

In the 16 cases for which the panel rated the disability as preventable with current medical technology, all the children suffer from severe or profound mental retardation, a disability which has required either institutionalization in the Children's Colony at Conway, Arkansas, or extensive outpatient care from MR-DDS. There are no subjects in this group from either the private DD center or the Crippled Children's Program.

In four of the cases, an event occurring during the prenatal period was indicated in the etiology of the disorder. Two mothers contracted rubella during pregnancy and gave birth to children with rubella syndrome. An additional two mothers were high multigravidity and gave birth to children who were profoundly mentally retarded.

In 11 of the 16 cases, an event occurring during parturition or in the immediate postpartum or neonatal period was implicated in the etiology of the developmental disability. In each case, poor management by the attending physician of the mother and/or child during these periods contributed to the child's severe/profound mental retardation. In all 11 cases fetal monitoring, cesarean section when the fetus was under stress, or the intensive care of the neonate would have prevented the disability. In only one of the 16

cases was a postneonatal event indicated in the etiology of the developmental disability.

#### **Developmental Disability Possibly Preventable**

There were eight cases in which medical intervention may have prevented the child's developmental disability. In four cases, an event during the prenatal period was indicated in the etiology of the disorder. All four children are institutionalized at the Children's Colony; all four are profoundly mentally retarded—two with microcephaly and two with hydrocephaly. The cause of these developmental disabilities is not known but in three of the four cases a viral infection during the prenatal period is suspected.

The probable etiology in the remaining four cases suggests that an event during the labor and delivery or the neonatal period contributed to the disability. Three of the children suffer from profound mental retardation and are institutionalized in the Children's Colony. The fourth child is receiving services at a private development disability center for severe cerebral palsy. In three of the four cases poor management of the child by the attending physician during the neonatal period is suspected. In the fourth case, meningitis was identified as the factor contributing to the neonate's mental retardation.

#### **Disability Not Preventable**

The final group of children were rated by the panel as having a disability not preventable with current medical technology. In three of the 19 cases, the disability was diagnosed as autism, a development disability of unknown etiology. In the remaining 16 cases the disability was of genetic origin or a congenital malformation. In the majority of the cases, the congenital malformation was unanticipated and therefore not preventable. Five of the 16 cases warrant special comment. In two of the cases of hemophilia and in two of the cases of congenital malformation, mothers reported a family history of such disorders. The one child with Down's syndrome was born to a 42-year-old high parity mother. In two of the cases of congenital malformation, mothers reported malformations in the siblings of the child in the study or his/her immediate family.

#### **THE INFANT AND MATERNAL HEALTH CARE SURVEY**

Analysis of the responses of the mothers of this group to The Infant and Maternal Health Care Survey yielded several disturbing findings. The



mothers of children with preventable disabilities were on the average significantly older than the mothers of the other two groups when they gave birth to the child receiving services. Twenty-five percent of these mothers were "high risk" in terms of their age and parity characteristics in comparison with 5% and 0%, respectively, of the mothers of children with nonpreventable and possibly preventable disabilities. Although 94% of these mothers received prenatal care, 80% of them received this care from a family physician or midwife. Moreover, 75% of these mothers had health problems during their pregnancy and 50% had difficulty in giving birth with an average labor of 15 hours—characteristics which differ significantly from those of the other two groups of mothers. Ninety-four percent of these mothers indicated that something was wrong with their baby at birth and 75% of the respondents indicated health problems of the child during the neonatal period. Interestingly, the reproductive histories of these women did not differ in any significant way from those of the women in the other two groups.

A review of the responses of the group of mothers with children with disabilities that may have been prevented lent general support to the findings of the panel study. Only one mother in the group was in a high risk category, not because of age or parity but because of severe diabetes mellitus. The vast majority of these women received prenatal health care beginning in the first trimester of their pregnancy and visited their care provider an average of 11 times. The family practitioner or midwife was the major provider of prenatal care. None of the women in this group had difficulty in giving birth as reflected in their low average length of labor—6 hours. However, more than half of the mothers indicated that their children had serious health problems at birth.

Two of the women in this group were living in urban counties at the time of birth of the child. However, the mothers of children for whom medical intervention during the neonatal period had the highest probability of preventing the developmental disability were from rural counties, counties which have few if any resources for intensive neonatal care.

The response of the final group of mothers to the survey (a disability not preventable) showed that these women were on the average 24 years old at the time of birth of the affected child. Only one of these women could be categorized as high

risk and 18 of the 19 mothers had full-term pregnancies. Moreover, all 19 mothers received prenatal care starting in the first trimester of the pregnancy and for most of them this care was provided by an obstetrician. These characteristics reflect the residency characteristics of the mothers—53% reside in urban counties. Five mothers or 26% of the sample had difficult parturition requiring a cesarean section. Although only two mothers reported a birth injury, 74% of the respondents indicated that there was something wrong with their child at birth. In terms of the reproductive history of these mothers, two or 11% reported a previous post-neonatal loss of a child and four or 21% had experienced a previous miscarriage.

In 74% of the cases in this group, the congenital malformation, genetic disorder, or autism could not be anticipated from the medical or family history of the mother. However, in more than a fourth of these cases, the genetic disorder or developmental disability could have been prevented through planned parenthood. Thus, in these five cases the disorder could be rated as preventable with current medical technology.

### SUMMARY

Even though retrospective studies present several methodological problems, the high level of internal consistency within the present study is encouraging and allows us to examine several implications.<sup>c</sup> First, in 20 of the 44 cases (46%), there is a high probability that current medical technology (which would include genetic counseling) could have prevented the developmental disability. Second, the vast majority of the children were born to mothers residing in rural counties of the state where fetal monitors and other specialized equipment crucial to the management of high risk births were unavailable. Almost all of these women received prenatal care, but not by an obstetrician. Third, infants born with health problems or who developed them in the immediate postpartum period had little or no access to neonatal intensive care.

### POLICY IMPLICATIONS

Although these findings are based on a small purposive sample, the evidence is overwhelming that many parts of the state are without adequate prenatal and perinatal health care, a situation which leads to a significant number of Arkansans needlessly suffering from mental retardation and

developmental disabilities. In terms of just the children in the sample who are now institutionalized at the Children's Colony at Conway, the economic costs are staggering. Fourteen of the 33 Colony children in the sample have developmental disabilities that probably could have been prevented with current medical technology. These children are on the average 5 years of age and if their life expectancies average 45 years they will require 40 years of institutional care. The average cost of institutionalizing a child at the Colony is \$35.00 a day or \$12,775 per year per child. Over the next 40 years, if present costs do not rise, the costs to the state of Arkansas for just these 14 people will be more than \$7 million. These are direct costs to the state. There is no way to assess the costs associated with the lost labor of a productive citizen or the intangible social and psychological costs associated with the suffering of the individual and his/her family.

The possible benefits of a regionalized perinatal health care program to Arkansas can be estimated from the experiences of states where such programs already exist. Nationally, it was estimated that of all live births 1.6% of the neonates had a birth weight of 1500 grams or less.<sup>2</sup> Moreover, approximately three of every four of these infants died during infancy.<sup>2</sup> Of those surviving infancy, 50% suffered from severe mental retardation.<sup>3</sup> In contrast, premature infants of higher birth weight had a significantly higher rate of survivorship and a much lower percentage of mental retardation—5%.<sup>3</sup> Intensive neonatal care centers in Florida and elsewhere in the United States, however, have made possible a reduction of approximately 50% in retardation, cerebral palsy, and other complications associated with prematurity.<sup>1</sup> The extent of this reduction is seen in a progressive study carried out by Florida's Regional Neonatal Intensive Care Program in which the developmental histories of 230 premature infants were followed for a two-year period. Of note is the medical outcome of the very small premature infants (1500 grams). In only 7% of these cases were the children evaluated as abnormal in mental ability—an 86% reduction in the expected incidence of mental retardation.<sup>1</sup>

Applying the experiences of the Florida program to Arkansas' 1976 birth cohort in only one area—mental retardation among low birth weight infants—suggests that a substantial improvement

could be made. Of the 33,870 live births in Arkansas in 1976, 249 infants with birth weights of less than 1500 grams survived the neonatal and post-neonatal period. An additional 2,284 infants with birth weights between 1500-2500 grams and 30.708 infants of normal birth weight also survived the neo and post-neonatal period. By multiplying the number of survivors in each weight category times the national impairment rate for states without regionalized perinatal care systems, it is estimated that 393 survivors of the 1976 Arkansas birth cohort suffer from severe/profound mental retardation. Multiplying these same figures on survivors times the impairment rate experienced by infants treated by the Florida Regionalized Intensive Neonatal Care Centers gives a substantially lower figure—147 infants. Therefore, it is estimated that a regionalized perinatal health program in the state of Arkansas could substantially lower the rate of severe mental retardation among low birth weight neonates. In the 1976 Arkansas birth cohort, an estimated 246 cases of severe/profound mental retardations may have been prevented by such a program—a reduction of 63%.

To more soundly document the finding of this research, further study is needed. A progressive study of a single birth cohort in which a scientifically selected sample of children can be followed through the neonatal, post-neonatal, and early childhood periods would be invaluable both in scientific terms and in policy development. A representative sample of children studied in this research format would permit control for sampling bias and the other confounding factors which have detracted from the present retrospective study. Most important, generalizations could be made from this sample to the population of children in this birth cohort.

#### NOTES

<sup>a</sup>Based on an actual case history reported by Carol L. Simons in an article entitled, "A high-risk maternity and child care program," *Contemporary OB/GYN*, 1977, 9, 111-113.

<sup>b</sup>The design used in this investigation poses problems common to all retrospective studies. One is the problem of "maturation." As mothers grow older, they selectively forget experiences or modify their recall of past experiences. Second is the problem of respondent attrition or losses of respondents through moves and death. Third is the bias in the selection of respondents and their differential response rates to the questionnaire. Finally, the small purposive sample does not permit control or estimates of variability and bias.



The "feasibility character" of this part of the study, however, lessens the importance of many of these problems. The major concern was to prepare the survey instrument, sample, and fieldwork within a limited cost-benefit framework. To reduce the problems of maturation and respondent attrition, the survey was limited to children in the preschool, 0-4 years age group. The rationale for this decision was that preliminary studies had shown young low gravida mothers to have good recall of most aspects of their maternal and obstetric health and health care, the birth process, and the neonatal health of their child. This was not the case with older higher gravida mothers. In addition, respondent attrition was lower during the limited time span of the study.

First, the independent ratings of the 44 cases in the study by the panel of physicians show a remarkable degree of consistency. If a correction is made for response error, there is a serious disagreement in only 4% of the ratings. Second, there is a high degree of internal consistency between the ratings of the panel of physicians and the

responses of the mothers to The Infant and Maternal Health Care questionnaire. Third, a comparison of the distribution of the 44 cases across the three categories—preventable though not preventable with current medical technology—by agency shows a pattern consistent with the types of clients normally served by each care provider. Finally, for the sample of children from the Children's Colony, the findings are similar to those of a panel study conducted by Green et al. at the same institution in 1977.

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# The Role of Lip Adhesion in Cleft Lip Repair

Robert W. Seibert, M.D.\*

## I. Introduction

Complete unilateral and bilateral cleft lips usually show the following abnormalities.

1. Marked displacement of the bony maxillary segments.
2. Distortion of lip soft tissue components.
3. Distortion of nasal anatomy.

Over the last few years, a technique known as lip adhesion<sup>1</sup> has been developed and refined in a successful attempt to improve the cosmetic and functional results of cleft lip closure.

## II. Principles of Lip Adhesion

1. Basically, the adhesion converts a *complete* cleft lip into an *incomplete* cleft

lip, that is, a cleft which does not extend into the floor of the nose. (See cases 1-3) The procedure is indicated in wide complete unilateral and bilateral cleft lips.

2. The procedure may be rapidly performed with little risk.
3. The procedure may be done within the first one to two weeks of life and under local anesthetic if necessary.
4. No lip tissue is sacrificed. No lip landmarks necessary for later definitive repair are destroyed. This is true even if there is wound dehiscence, a rare circumstance in an otherwise normal infant.
5. The adhesion may be carried out in either the upper part of the lip (Mil-

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Case 1-A.

3-weeks-old female with wide complete left cleft lip and palate.



Case 1-C.

8-months-old, 3 months post definitive lip surgery (Millard).



Case 1-B.

5-weeks-old, 2 weeks post lip adhesion.



Case 2-A.

One-week-old female with bilateral cleft lip and palate—complete on left side only.



lard,<sup>2</sup> Randall<sup>1</sup>) or in the lower one-third (Walker, Collito<sup>3</sup>).

6. Undermining of soft tissue off the lateral maxillary segment should be avoided unless absolutely necessary. Conservative undermining of the medial lip element off the premaxilla may be done instead, or, alternatively, a lower one-third adhesion without undermining done.

### III. Benefits of Lip Adhesion

1. The procedure improves final results of definitive lip repair by a) decreasing tension on lip closure, b) placing maxillary bony segments in a more normal relationship, c) better alignment of lip muscles and nasal structures (ala and columella), and this may avoid secondary revision surgery later. (See cases 1-3)
2. It may substitute for maxillary ortho-

paeic appliance in many cases.<sup>4</sup>

3. It may facilitate feeding.
4. Psychological benefit to parents may occur because infant is more acceptable looking.

### IV. Risk of Complications

1. General anesthetic risk.



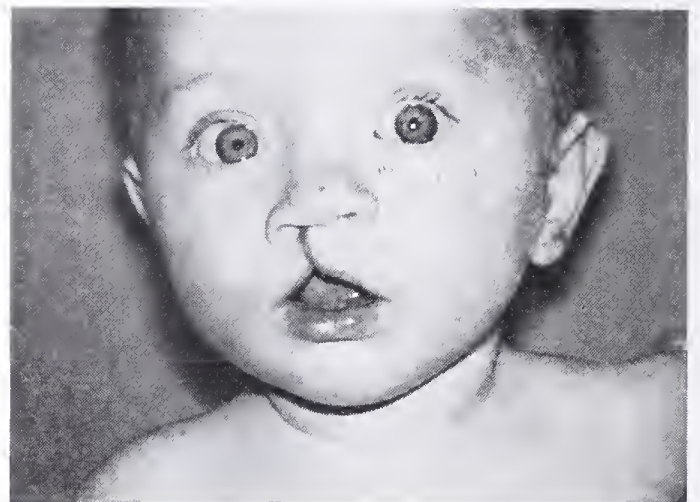
Case 3-A.

One-week-old male with wide complete right cleft lip and palate.



Case 2-B.

5-months-old, lip adhesion done at 10 days of age.



Case 3-B.

5-months-old, lip adhesion done at 3 weeks of age.



Case 2-C.

6-months-old, 3 weeks post definitive bilateral cleft lip surgery (Millard).



Case 3-C.

9-months-old, 4 months post definitive lip surgery (Millard).

2. Surgical complications: bleeding, infection, dehiscence.
- V. Experience of Arkansas Children's Hospital—Department of Otolaryngology and Maxillo-facial Surgery: July 1, 1976–December 31, 1978 (2.5 years)
  - Lip Adhesion—14
    - Unilateral Cleft Lip—11
    - Bilateral Cleft Lip—3
  - Complications—Wound dehiscence—1 (7%)
    - Infant with severe congenital cyanotic heart disease.
  - Other Complications—None

## SUMMARY

The lip adhesion procedure, properly performed in selected cases, provides both immediate and long term benefits to the patient with complete cleft lip deformities.

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## ELECTROCARDIOGRAM



## OF THE MONTH

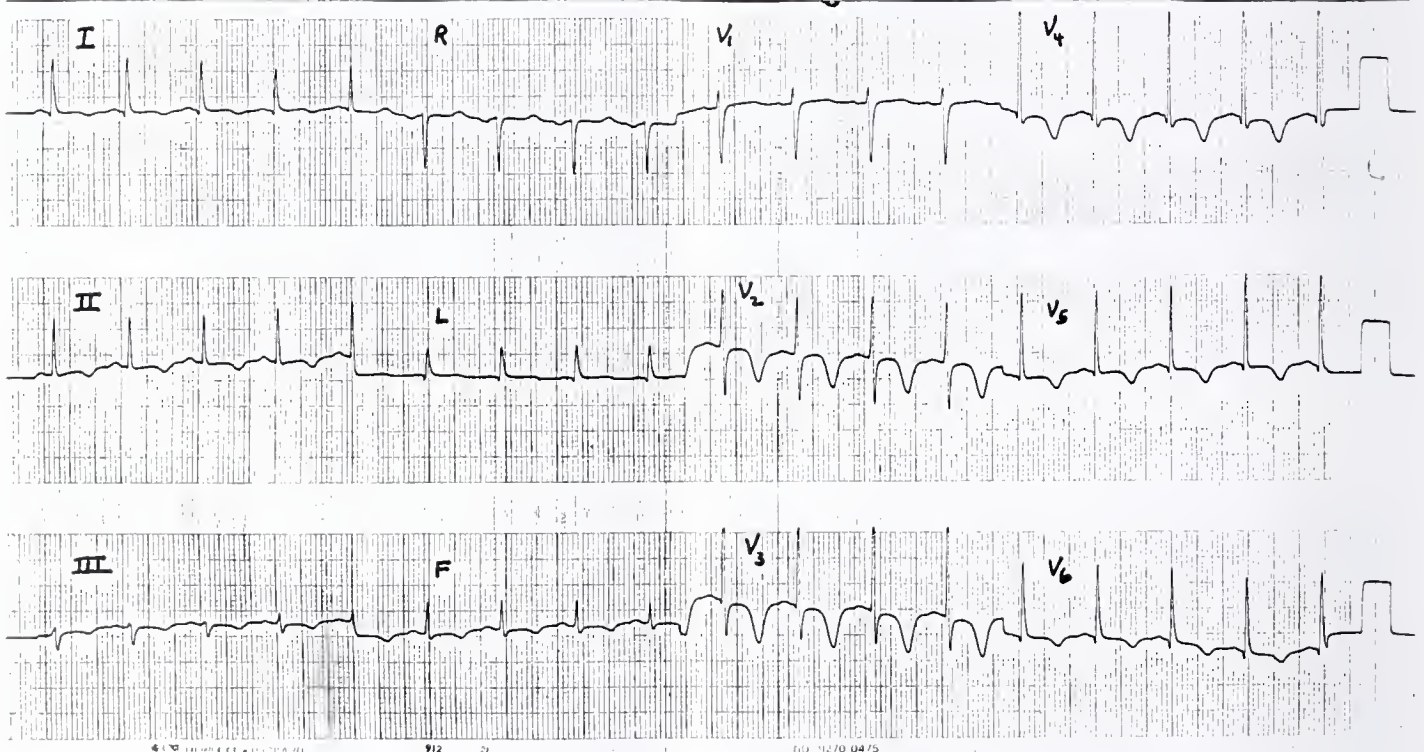
The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 154)

**HISTORY:** A. W. is a 35-year-old male with a hypertensive history who presented to the hospital because of headache. The patient quickly became unconscious but did not lose his pulses. Other than poorly treated hypertension, he had no other cardiovascular disease risk factors. His cardiovascular examination was normal except for a blood pressure of 150/100. The patient's ECG, shown below, was done prior to carotid arteriography.

With the history as stated and these ECG changes, which one of the following explanations for the ECG changes and subsequent courses of action would be most appropriate?

1. The ECG changes are secondary to LVH in turn secondary to hypertension and he thus needs acute therapy for hypertension.
2. The ECG changes are secondary to nontransmural infarction and he should not have elective arteriography for 6 months.
3. The ECG changes are probably secondary to subarachnoid hemorrhage and he should be allowed to undergo the arteriographic procedure.



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# Office Orthopaedics

## Extremity Splinting-Part I "The Upper Extremity"

R. Barry Sorrells, M.D.\*

**Splint** (Noun) "An appliance, as of wood, metal, or plaster of Paris, used to keep in place, or protect, an injured part."<sup>1</sup>

**Splint** (Verb) "To support and immobilize (as a broken bone) with a splint."<sup>2</sup>

The first definition (from 1960) can now be expanded to include thermoplastics, fiberglass, resins, and acrylics. The second definition (from 1975) represents our current practice of using a noun in the active sense, i.e., "the patient fractured his leg". Definitions and practice change with time!

Many thousands of years ago the Egyptians splinted fractures by linen stiffened with gum or plaster. Starch, clay and egg albumin were employed. As time has passed, we have refined our materials and techniques of splinting, we have learned to splint (verb) with a splint (noun) but our principle has remained the same—immobilization.

The office orthopaedist and the emergency room orthopaedist frequently have need to immobilize an injured part. The splints (N.) currently available to him/her for splinting (V.) include plaster (old) as well as many newer materials (ad infinitum). Some examples applicable to anatomic areas of the upper extremity follow:

### "The Shoulder"

Most non-displaced fractures of the scapula and upper humerus, shoulder sprains, bursitis,

arthritis and tendinitis cases, reduced dislocations, and reduced fractures can be adequately immobilized with a commercially available shoulder immobilizer (Fig. 1), Velpeau sling and swathe, or a simple sling (Fig. 2). The principle is to hold the shoulder immobilized by binding the humerus next to the body, thus preventing flexion, extension, and abduction. Holding the forearm across the abdomen limits shoulder rotation. While immobilization is not complete, such treatment usually is sufficient. More rigid splinting of the shoulder is difficult to apply and maintain.

The fractured clavicle can usually be adequately splinted with the figure-of-eight splint (Fig. 3). This provides emergency as well as definitive immobilization in almost all cases. Holding the shoulders back tends to "lengthen" the overlapped



Figure 1.  
Shoulder immobilizer.

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clavicle fracture, restoring length and offering a moderate degree of immobilization necessary for comfort and healing.

### "The Elbow"

Sprains, certain undisplaced or minimally displaced fractures, tendinitis and arthritis cases can be treated with a simple sling (Fig. 2). Flexion and extension are limited, the elbow maintained at a 90 degree angle. Forearm rotation (supination and pronation)—an elbow function—is not, however, well controlled with a sling.

More rigid immobilization of the elbow with control of rotation can be accomplished with a posterior splint. Commercially available metal or plastic "gutter" splints are sometimes used effectively—especially as a temporary measure (Fig. 4).

A well molded posterior plaster splint can easily be custom tailored to the patient, assuring individual fit and rigid immobilization. Thus the elbow can be held at the desired angle and rotation can be controlled by secure immobilization of the forearm. The main problem encountered with the posterior plaster splint is weakening and

hinging at the elbow. This can be prevented with a very heavy and strong splint, or better yet by placing an angle brace medially and laterally to act as a tether (Figs. 5, 6). The splint should be well padded, molded at the arm, elbow, and forearm and supported by a sling. This type of immobilization will usually suffice for reduced elbow or radial head dislocation, following reduction of a fracture, and other cases where rigid control is necessary. The posterior splint has the obvious advantage over a circular cast in that the antecubital space is left open and less constriction is produced, allowing for swelling.

In lieu of hand assembling the posterior plaster splint from components, a newer material known as OCL™ is a commercially available plaster splint which can be purchased in long rolls, in various widths. The desired amount is simply cut from the roll. The splint is composed of multiple layers of conventional plaster of Paris, one side



Figure 2.  
Sling.

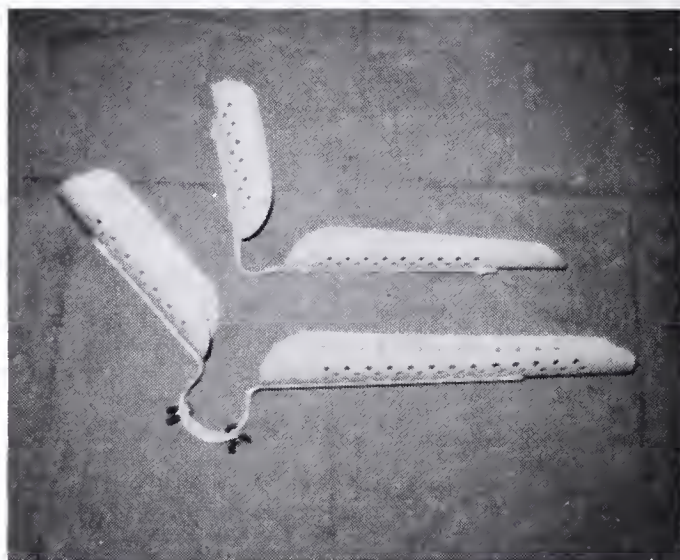


Figure 4.  
Elbow gutter splints.



Figure 3.  
Clavicle splint.



Figure 5.  
Posterior splint components.

has foam padding and the entire splint is encased in soft cotton flannel. The material is emersed in water as with conventional plaster, squeezed to remove excess water, and applied to the patient, the foam toward the skin. Short strips can be applied medially and laterally to act as a tether as previously described and the splint wrapped on the forearm, elbow and arm with a cotton or elastic bandage. Drying time is similar to that of fast setting plaster (approximately 10 to 15 minutes).

A recently introduced splint material of knitted fiberglass fabric impregnated with polyurethane and resin is quite useful for construction of the posterior splint (Fig. 7). Emersion in room temperature water initiates a chemical reaction which causes the material to become rigid. This material has the advantage in that it is not only strong but lightweight, radiolucent, porous and not significantly affected by additional exposure to water or

moisture. When used for the posterior splint, the material is substituted for plaster, again the side tethers can be applied and the padded splint wrapped on the extremity as described. Setting time is approximately 15 minutes.

### "The Wrist"

There are many commercially available wrist splints (Fig. 8). These are usually made of metal or fabric reinforced with metal. The metal "gutter" splints usually extend from the upper forearm to the distal palm, are applied to the volar surface and place the wrist in a moderate "cock-up" or dorsiflexed position. They are easily applied but do not conform well and thus provide only a moderately rigid immobilization. These "gutter" splints are bulky and serve as a better temporary than definitive treatment splint. The metal reinforced fabric splints conform a bit better, are less bulky and are easily applied and held in place by lacing, buckles, or Velcro™ closures.

A molded volar wrist splint can be custom fabricated of padded plaster, OCL™, or fiberglass/resin (Fig. 9) as described for the elbow. The splint should extend from the upper forearm along the volar wrist to the distal palmar crease. The wrist can be placed in any degree of flexion or extension, radial or ulnar deviation but most commonly in a position of mild "cock-up" (about 30 degrees dorsiflexion) and neutral deviation. The distal palmar crease should not be crossed in order to prevent blocking metacarpal phalangeal motion and resultant stiffening. The thumb can be left free with only a small "bridge" of wrapping through the web space.



Figure 6.  
Custom tailored posterior plaster splint with tether.



Figure 7.  
Fiberglass splint.

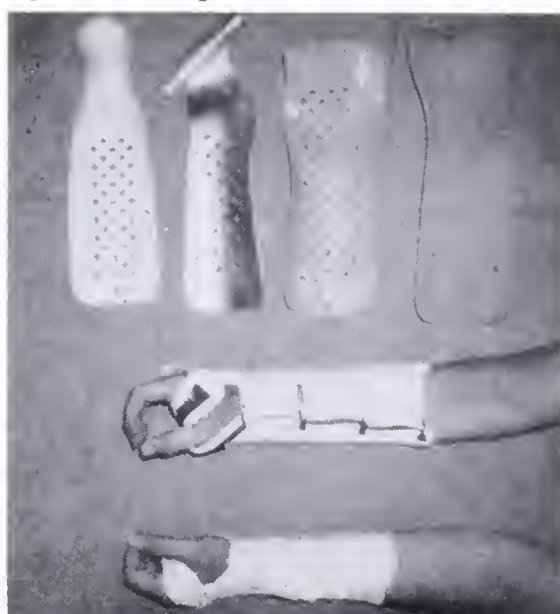


Figure 8.  
Commercially available wrist splints.



**"The Hand"**

Again a multitude of splints is available for immobilization of the hand and fingers (Fig. 10). The hand is usually maintained in the "position of function" i.e., moderate flexion of all joints—MCP, PIP, and DIP (Fig. 11). The adult hand should be able to hold a 12 ounce beverage can. Extreme postures of flexion and extension should be avoided to prevent joint stiffening.

A very useful finger splint is the foam padded aluminum strip which is available in various widths and can be cut to the desired length (Fig. 12). This splint is malleable and can be custom molded to the patient. The splint can be used alone or can be incorporated into the volar wrist splint as described (Fig. 13). Digits not requiring immobilization can be left free.

While not all methods of splinting can be included in a brief article such as this, certain of the more common types are described. Part II "The Lower Extremity" will follow in a future issue.

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Figure 9.  
Custom tailored volar wrist fiberglass splint.



Figure 10.  
Hand/finger splints.



Figure 11.  
"Position of function."

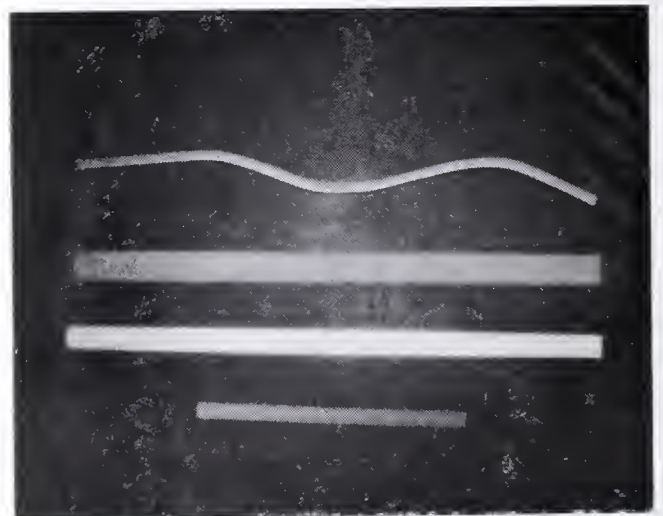


Figure 12.  
Malleable foam/aluminum finger splints.



Figure 13.  
Volar wrist splint with finger splint.

# Pediatric Review:

## Development and the Environment

Patrick Casey, M.D.\*

This series of two papers will attempt to present a brief overview of children's development. The first paper will deal with some general issues of normal and abnormal development. The second paper will discuss the medical providers' role in assessing children with suspected problems in development.

*Definition.* Development has been defined as the changes in the skill level or quality of function of the whole organism. The pioneer work of Arnold Gessell and others divided normal development into the areas of gross motor, fine motor, language, personal-social, and cognitive-adaptive.<sup>1</sup> Most physicians during training are exposed to charts of normal "developmental milestones", and they recognize these as evidence of normal developmental progression. Thus, these milestones will not be reviewed in this paper. The assumption has been that there is an inevitable progression of skills in the infant. It has been assumed that there is a relatively fixed ultimate developmental potential, depending on the neurophysiologic wholeness of the infant, that will result in normal development or in problems such as mental retardation, cerebral palsy, school learning problems, etc. Research and clinical experience over the last twenty years has taught us that the developmental potential for most children is alterable or affected by the environment in which the child lives, to an extent beyond the biologic makeup of that child. Thus, a revised definition of children's development suggests that it is an increasingly complex series of *interactions* of an evermore skilled organism with its environment, both social (parents and family) and non-social.

Some of the data to support this revised definition will be presented in the following sections.

*High-Risk Infants and Children.* The term "high-risk" infant is one which has been popularized over the last decade and one which has little clear meaning to most people who use it. It is a statistical term which implies that a child with a certain condition is more likely than the average to suffer from problems in development. There

are three types of conditions which are categorized as high-risk. First, children who are born with certain biologic abnormalities, such as Down's Syndrome or congenital rubella syndrome, usually without exception suffer from developmental abnormalities. These children comprise only a small percentage of all children with developmental problems, and the ultimate developmental potential of even some of these children have been shown to be altered by the child's environment.<sup>2</sup> The second category of high-risk children are those who suffer a transient unfavorable medical event in the perinatal period such as prematurity, hypoxia, depressed Apgar, etc. Although these medical events are important for the individual child, they have been shown to be poor predictors of developmental problems in groups of children. Parmelee followed 126 pre-term infants for two years, and he assessed the severity of their medical course with an Obstetric Complication Scale, and a Post-Natal Complication Scale. There was absolutely no correlation between these scales and the infants' developmental quotients (Bayley and Gessell) at 24 months of age.<sup>3</sup> Francis-Williams followed 100 children born less than 1500 grams, and full scale IQ tests were performed on all these children between 4 to 12 years of age. No definite correlations were found between IQ and birth weight, gestational age, or neonatal illness. However, IQ differences between social classes were marked and significant, with the highest social class mean IQ of 107, the middle social class mean of 99, and the lowest class mean IQ of 86.<sup>4</sup> Werner in the Island of Kuai study followed 639 term children to the age of 10 when IQ tests were administered. Their complex perinatal-stress score had negative correlation to IQ ( $r = -.08$ ), while the socio-economic status had a markedly significant correlation to IQ ( $r = 0.38$ ,  $P < .001$ ).<sup>5</sup> The final category of high-risk children are those children born into a stressed environment. This typically consists of a family living in poverty, a situation which is exaggerated when the mother is single and unsupported, and/or very young and inexperienced, and/or has several other children, and/or has a problem like drug abuse or psycho-

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emotional instability which may restrict her competence as a parent. (Of course, most of the latter problems may occur in families who have very adequate financial resources.) At least 80% of all children who are mentally retarded are classified as "mildly" retarded (i.e. IQ 55-75), and about 75% of these children are from the stressed environments described above.<sup>6</sup> Experience over the last 15 years in multiple intervention programs has demonstrated that the IQ's of children in this type of high-risk situation is alterable to a great extent by exposing these children to a more responsive and stimulating environment.<sup>7</sup> One such program consisted of children born to poverty whose mothers' IQ's were less than 75. IQ differences between 20 experimental children and 20 comparison children averaged about 20 IQ points throughout the preschool years. At six years of age the experimental group mean IQ was 111, and the comparison group was 87.<sup>8</sup>

These studies, and many others, suggest that although children with developmental problems are frequently found to have associated complications of pregnancy and the perinatal period, the vast majority of infants who suffer such problems do not have later difficulties when followed prospectively. Beyond this, there seems to be major interactions between perinatal complications and the child's environment on the child's ultimate developmental outcome. Thus, prediction of outcomes based on perinatal difficulties are usually unsuccessful unless the environmental context is specified.

*Reproductive Risk and Continuum of Care Taking Casualty.* The most contemporary and relevant model of children's development is a *transactional* model which stresses the plastic nature of the social environment, and the *active* role of the child in shaping its environment. (See figure 1.) Both the child and his environment interact and impact on each other. Problems on either end of the transactional spectrum, i.e. in the

child or the environment, create the potential for developmental abnormalities, but the probability for these abnormalities increases significantly when there are problems in both ends of the spectrum simultaneously.<sup>9</sup> For example, a child who suffers a transient medical problem of moderate severity is less likely to develop a developmental problem if raised in a stable family situation with educated, loving parents. The same child raised in an unstable, poor, uneducated family is significantly more likely to suffer from mental retardation, etc.

The understanding of this model has clinical implications for the medical provider. Obstetrical, perinatal, and pediatric care must continue to attempt to minimize the physical insults to mothers and infants so that the infant may be as intact and competent as possible to transact with its environment. A physically ill child, a nutritionally unsound child, or a temperamentally difficult child may stress the environment beyond its plastic tolerance. The physician traditionally is comfortable with and competent at dealing with this end of the spectrum. Is there a role for the physician in dealing with the environmental end of this transactional model? As a minimum, most communities have professionals like social workers and educators who can assist the physician in stabilizing and enhancing a stressed environment. Several important characteristics of effective parent-educators, in all social classes, have been described in the literature and may be of help to the medical clinician. First, an affective and mutually responsive early parent-child interaction is of central importance.<sup>10</sup> Second, such parents provide a physical environment that is appropriate to the child's developmental status, and in which the child is free to explore. Next, they provide verbal stimulation. Finally, such parents provide "consultation" for their developing infant by providing information and instruction usually at the child's request.<sup>11</sup> A successful clinical approach utilizing this information has been presented in the pediatric literature.<sup>12</sup>

*Summary.* Problems in development are rarely inevitable. Few medical-biologic events are serious or irreversible enough that one can predict with any degree of certitude regarding developmental potential. On the other hand, there is nothing specifically etiologic about socioeconomic status. Neither poverty or wealth are explanatory variables. Rather, poverty is cor-

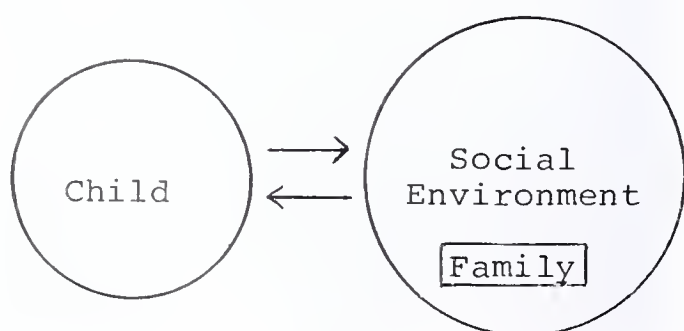


Figure 1.

related with multiple other variables such as undernutrition, poor medical care, and less than optimal child-rearing practices which in combination are more useful predictors of developmental outcome. There are useful clinical approaches which allow the medical provider to optimize both ends of the *transactional* model in order to enhance children's developmental potential.

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## EDITORIAL

# Immunology and Antibodies

Alfred Kahn, Jr., M.D.

The field of bacteriology and immunology has undergone a dramatic expansion in the past few years.

The role of antibody dependent cell-mediated cytotoxicity is said by Sanal and Buckley (*Journal of Clinical Investigation*, Vol. 61, P. 1, January 1978) to have a possible role in graft and tumor rejection as well as hemolytic disease. Because knowledge of antibody-dependent cellular cytotoxicity in immunodeficiency disease has not been intensively investigated, Sanal and Buckley have published a study on this topic. Their work encompassed testing patients with different types of primary immune disease against three different antibody coated targets; they also tested isolated leukocyte subpopulations from normal individuals. They used twenty-eight patients with primary immunodeficiency: ten with X-linked agammaglobulinemia, ten with common variable or B-lymphocyte agammaglobulinemia, three with X-linked immunodeficiency with hyper Ig-m, two with partial Digeorge Syndrome, two with severe combined immunodeficiency, and one with chronic candidiasis. Twenty normal controls were used. The leukocytes from the patients and controls were tested for ability to lyse three different types of antibody coated targets in vitro: human HLA antibody coated lymphocyte targets, rabbit Ig G antibody coated chicken erythrocytes, and far human anti DC coated O plus erythrocyte targets. Their results using mononuclear cells showed a definite reduction in the cytotoxic index of most of the patients with immunodeficient disease when tested against human antibody coated eymphocytes. Using chicken erythrocytes, a significant reduction was found only in the common variable agammaglobulinimia; using human erythrocytes the index was lower in the common variable and hyper Ig M groups. Pa-

tients with severe combined immunodeficient disease have a marked reduction in this type of effectar cell function, according to Sanal and Buckley.

Of more immediate clinical significance is "Studies of Cell Subpopulations Mediating Mitogen Hyporesponsiveness In Patients With Hodgkin's Disease" by Sebbitt, Bankhurst, and Williams (*Journal of Clinical Investigation*, Vol. 61, P. 55, January 1978). All physicians are aware that patients with Hodgkin's Disease have poor immune responses. Only recently has the defect begun to be understood. Sebbitt et al point out that patients with Hodgkin's Disease have a decreased delayed hypersensitivity and decreased homograft reaction. They further state that the ability of Hodgkin's Disease patient to form antibodies is intact; peripheral lymphocyte are usually about normal early in the disease course; the loss of response to phylohemagglutinin occurs before the lymphocyte count falls. A T-lymphocyte defect fits this pattern. Sebbitt, Bankhurst, and Williams planned this study to determine if a suppressor type of T cell could be responsible for the immunologic defect. They selectively depleted certain cell populations and tested for phytohemagglutinin responsiveness. The blood from patients with Hodgkin's Disease was passed through glass wool; some mononuclear cells were removed; after the mononuclear cells which were glass wool adherent were removed, the mitogen responsiveness increased; this suggests that patients with Hodgkin's Disease passes a suppressor cell which accounts for at least some of their hyporesponsiveness.

The relationship of the spleen to resistance against disease has been under study for years. Patients undergoing splenectomy are statistically more susceptible to infection. Spirer, Zakuth,

Diamant, Mondorf, Ssefanescu, Stabinsky, and Fridkin have reported on "Decreased Tuftsin Concentrations In Patients Who Have Undergone Splenectomy" (*British Medical Journal*, Vol. II for 1977, P. 1574, December 17, 1977). They state that tuftsin, which is a tetrapeptide, is made in the spleen. Tuftsin stimulates leukocyte phagocytosis. This substance seems to work on both neutrophils and macrophages. Tuftsin has been synthesized, and there is a radio immune assay test for it. Using the assay test Spierer et al studied thirty-five normal controls and 108 splenectomized individuals. The level of tuftsin in splenectomized patients was much lower than in controls. The authors feel that the routine splenectomy in performing staging for Hodgkin's Disease should be reconsidered in view of the drop of tuftsin after splenectomy. Spierer et al state that some other functions of the spleen in infection are not disturbed seriously by splenectomy as forming opsonins, formation of antibodies, and regulation of B and T lymphocytes.

An interesting series of cases of infectious mononucleosis has been published in the *American Journal Of Medicine* by C. A. Horwitz and

Ophers (Vol. 63, P. 947, December 1977). They studied forty-three cases of heterophil-negative infectious mononucleosis cases and mononucleosis like illnesses. Contrary to the accustomed idea, mononucleosis is said to be a heterogeneous group of diseases which are not due solely to the Epstein-Barr virus. Cytomegalovirus, rubella virus, and adeno viruses can cause a mononucleosis like illness with four typical signs: fever, sore throat, lymph node swelling, and atypical lymphocytes. Apparently, mononucleosis produced by the Epstein-Barr virus usually produces a positive heterophil test but not always, a rather heretical finding. They state that most cases of mononucleosis who have negative heterophil tests are due to cytomegalovirus. The importance of the cases of mononucleosis with negative heterophil tests is that they may be confused with some devastatingly bad diseases as leukemia lymphoma. A false diagnosis of lymphoma might lead to unnecessary biopsy and very potent drug therapy. Horwitz et al feel that the blood smear is the best early differential test in separating mononucleosis from other diseases—as the clinical findings are variable and non-specific.



## MEDICINE IN THE NEWS



### THE MONTH IN WASHINGTON

National Health Insurance sparks keep flickering. The Senate Finance Committee has budgeted six days of sessions this summer on the issue.

Committee Chairman Russell Long (D-LA) steered the panel close to a vote recently but then postponed consideration after resistance surfaced on the budget-breaking aspects of any NHI plan.

The bill before the Committee has been chopped back in an effort to make it easier to win approval. The catastrophic provision was changed to a voluntary plan with tax incentives to encourage businesses to purchase such coverage for their workers.

Several Senators have remarked privately they believe the NHI bill is dead, but when the power-

ful Long is running the show and wants a bill, legislation can't be written off.

The legislative trip through committee, Senate floor, House committees and House floor, appears far too lengthy and difficult for a NHI bill to survive this year, particularly in the light of the growing fight for a balanced budget.

The House-Senate Conference Agreement on Congressional Spending Limitations has directed a \$1.4 billion reduction in Medicare-Medicaid spending next fiscal year. House and Senate health committees are trying to figure out how to accomplish this and squeeze other health programs under the low ceilings.

\* \* \* \*

The American Medical Association has called



upon the Federal Trade Commission to junk its investigation of physician control and impact on Blue Shield plans.

Physicians' formal participation on the boards of open-panel medical prepayment plans has been declining since 1977, when the two FTC reports on the issue were concluded, the AMA noted in a statement to the Commission.

"An objective review of the current state of these plans' operations would support immediate termination of the staff investigation. Many public dollars have been spent to generate the staff reports and their somewhat simplistic analyses. This matter should be closed, and the boards of such plans commended for the substantial move in recent years to open to public view and control these medical plans."

By 1979 more than 60 percent of Blue Shield plans, representing 83 percent of total subscription income had non-physician majorities on their boards, the AMA noted. "Every year there is less and less reason to consider any rulemaking by FTC, much less litigation or other punitive action against these plans."

The AMA said there's no justification "for spending more public dollars to pursue FTC's speculation that any physician participation on these boards increases physician reimbursement levels and health care costs."

Physician leaders who have served on open-panel plans, the AMA said, have been able to bring pertinent experience to bear without undermining the public and subscribers' interest. "The beneficial impact of medical participation in these endeavors must be recognized."

\* \* \* \*

Meanwhile, the Congress has granted the Federal Trade Commission a new lease on life, providing a formal three-year money authorization. The bill clips the controversial agency's wings by subjecting its decisions to a veto by Congress. Enactment of the measure followed a lengthy bitter dispute by members of Congress with the FTC, which lawmakers contended was overstepping authority in its all-out campaign to crack down on business and the professions.

\* \* \* \*

The Justice Department has told Virginia health planners that some health planning agreements may be a violation of the federal antitrust laws.

The case involves a proposal to encourage

Richmond, VA hospitals to take cooperative steps to reduce obstetric services.

The Central Virginia Health Systems Agency was told by the Justice Department that such proposed joint actions might come under the shadow of the antitrust laws unless specifically approved by Congress or state legislatures.

The advisory Justice Department letter has national implications on health planning activity and may force Congress to take another look at the wording of the law. The comment was termed a "very serious development that would run directly contrary to what the Congress intended," by the American Health Planning Association.

A Richmond hospital group had challenged the obstetric proposal, claiming it could inhibit competition and new services. As a result, the Justice Department was asked to express its views.

The problem was bound to arrive sooner or later since health planning decisions often run contrary to the assumptions of a competitive health marketplace.

\* \* \* \*

Facilities planning to reduce bed capacity or services should not have to seek certificate-of-need approval by planning authorities, the AMA has told the Health and Human Services Department.

Commenting on proposed regulations to carry out changes in the planning law, the AMA said "such application of the certificate-of-need program could force an institution to keep beds and maintain a service even though it might deem it inappropriate and infeasible to do so. This would seem to be holding the institution in bondage."

Congress' concern in the planning law was increases, not decreases, the AMA noted.

Also questioned by the AMA was the wording of the new regulation extending certificate-of-need to purchase of expensive equipment (more than \$150,000) for physicians' offices if the equipment is designed in large part for use by hospital inpatients. The requirement for "irregular" use only for inpatients is too inflexible since it would apply to such cases as an agreement with a hospital to use the office equipment when the hospital equipment is undergoing regularly scheduled maintenance, the AMA said.

The AMA said it was "strongly concerned" with a requirement that the state planning agency consider the quality of care in an institution as an element in certificate-of-need determination. The actual determination of quality should be

resolved by agencies such as the Joint Commission on Accreditation of Hospitals, state licensing authorities, and professional standards review organizations, said the AMA.

\* \* \* \*

President Carter is reported ready to order a stringent clampdown on all hospital construction and renovation involving federal funds. Almost \$1 billion of building and renovation planned for federal hospitals might be cancelled.

The impact on non-government hospital construction would be far greater.

The presidential action would be the most dramatic step taken by President Carter against adding hospital beds. The Administration has contended there are 130,000 unneeded beds in the nation and that adding to the supply is wasteful, costing the country \$4 billion annually.

One of the prime weapons against new hospitals could be the threat of withholding Medicare and Medicaid payments for capital costs, a \$2.3 billion budget item next fiscal year. Other federal aid that could be shut off includes federal grants, loan guarantees and loans administered through a variety of agencies. Consideration is being given to action against issuance of tax-exempt bonds for hospitals in surplus areas.

The government estimates there are too many beds at present in 196 of the nation's 213 health service areas. Thus, this Administration policy could affect construction and renovation in most areas of the country. The policy would not hit construction in areas found to need beds.

The proposal to move against hospital construction is thought to have been in the works for several months with the White House, the Office of Management and Budget, and the Health and Human Services Department working on the plan. One reason for the proposed action is the failure of Congress so far to enact the Administration's Hospital Cost Containment plan which included a limit on capital spending.

\* \* \* \*

In trouble on Capitol Hill is the federal government's long-standing program of money for medical schools based on the number of students.

A sharp reduction in the so-called capitation aid was contained in the Health Manpower bill approved recently by the House Commerce Committee. There are strong pressures in the Senate to whittle the aid program.

Not only are medical schools under the gun from the authorizing committees—House Com-

merce and Senate Human Resources—but the appropriations committees are eyeing cutbacks.

The Carter Administration wants to kill capitation aid, arguing that the number of physicians is becoming ample and that it is time for the government to start easing back on the financial aid launched more than a decade ago to expand the physician supply. There have been veto threats raised if Congress approves legislation providing more than the \$425 million the Administration has asked for the entire medical manpower package.

The Commerce Committee bill goes over the budget, authorizing \$649 million, though it pares the capitation program, authorizing over the next three fiscal years \$61 million, \$40 million, and \$20 million.

Present level is \$81 million.

Meantime, acting under severe budget pressures, the Senate Appropriations Committee has agreed to cut \$40 million of currently-allocated funds for capitation payments. Acting on the same budget rescission and supplemental appropriations bill, the House Appropriations Committee rebuffed the Administration's request to eliminate the capitation money.

A House-Senate conference probably will be needed to determine whether current capitation appropriations can survive intact.

\* \* \* \*

Leonard Schaeffer has resigned as Administrator of the Health Care Financing Administration, the agency that operates the Medicare and Medicaid programs.

The announcement came as a surprise. Schaeffer, 35, was reported taking a position outside of government. His resignation was not believed to be on policy grounds nor due to any dispute with Patricia Harris, HHS Secretary.

The news came as HCFA was on the verge of assuming added authority in a major HHS department reorganization. Health planning activities are expected to go from the Public Health Service to HCFA.

Schaeffer two years ago succeeded Robert Derzon as head of HCFA, an Agency that was created by former Health, Education and Welfare Secretary Joseph Califano to rival the PHS.

\* \* \* \*

Ten Senators have challenged a government proposal to change Medicare reimbursement for hospital-based physicians.

The regulation at issue would require hospitals



to contract with hospital-based physicians for certain services rather than the present practice of reimbursing them on a reasonable charge basis under Medicare Part B.

The HHS Department was urged to withdraw the proposal "until the impact of the change has been properly evaluated."

Signing the letter to HHS Secretary Patricia Harris were Sens. Howard Baker (R-TN), Lloyd Bentsen (D-TX), David Boren (D-OK), Dale Bumpers (D-AR), Ernest Hollings (D-SC), Robert Morgan (D-NC), David Pryor (D-AR), Jim Sasser (D-TN), Strom Thurmond (R-SC), and John Tower (R-TX).

The proposed rules would require all hospital-based physicians to be reimbursed under Medicare Part A unless (1) the services are personally performed by the physician, and (2) the services contribute to the diagnosis or treatment of the patients.

The new regulations probably will not result in any cost savings for the Medicare program, the Senators said. A cost that was borne by the Part B portion of Medicare will now be paid through Part A—the hospital portion. "Shifting the costs of these services to the hospitals could lead to higher hospital expenses at a time when the Administration is actively attempting to reduce hospital costs," they said.

Their principal concern, "is the effect on delivery of medical care in medically underserved areas.

"For example, one clinic in the southwestern part of Arkansas provides services for seven rural hospitals. These physicians are often the only specialists serving these communities and provide regular on-site consultations with the patients and staff in these facilities. These services will be severely disrupted by this proposed change."

The change is proposed to be implemented by July 1, 1980. This does not give hospitals or physicians adequate time to comply with the regulations, the letter said.

A study should concentrate on the effect of the change on medical care in rural areas, Medicare recipients, and the overall effectiveness of the Medicare program, the Senators wrote.

\* \* \* \*

House-Senate conferees have agreed on a proposal to set voluntary federal standards for "Medigap" private health insurance aimed at meeting the gap not filled by Medicare coverage.

The proposal stemmed from Congressional hearings earlier this year on abuses in the commercial insurance field. The standards include a minimum loss ratio, the amount of premiums paid back. In states that do not meet terms of a proposed model law, the federal minimum standards would apply. Companies that meet the standards could advertise the fact.

\* \* \* \*

Dr. Fred Robertson has been named medical director of the Leo N. Levi National Arthritis Hospital in Hot Springs. Dr. Robertson is a native of Searcy. He received his undergraduate degree from the University of Central Arkansas in Conway and his medical degree from the University of Arkansas School of Medicine.

Dr. Robertson interned at Denver General Hospital and did a residency in internal medicine at the University Hospital in Little Rock from 1972 to 1975. He then did a fellowship in rheumatology at the University of Tennessee in Memphis.

The Leo N. Levi National Arthritis Hospital is an 89-bed hospital which specializes in the treatment of all forms of arthritis. It has an extensive physical therapy department, as well as complete diagnostic capability.

Dr. Robertson replaces Dr. E. K. Clardy, who had served as medical director of the hospital since 1952. Dr. Clardy has returned to private practice in Hot Springs, but will continue his association with the hospital on the admitting staff.



#### ANSWER—Electrocardiogram of the Month

**DISCUSSION:** The history as presented is consistent with subarachnoid hemorrhage. Most patients who experience cardiac arrest and subsequent loss of consciousness will have a pulseless period of significant duration. This patient's ECG shows a sinus tachycardia, a prolonged QT interval, and impressive T-wave inversion in V<sub>2</sub>-V<sub>6</sub> and other leads as well. There are no significant ST changes. LVH can not be called on this ECG. The T-wave changes classically seen with cerebrovascular injury consist of deep and widely splayed T-inversion with QT prolongation and may be difficult to separate from changes secondary to ischemia or infarction. The changes may also be seen with radical neck dissection, vagotomy, Stokes-Adams attacks, and carotid endarterectomy but are rarely seen with thrombotic CVA's. Thus, the history suggests subarachnoid bleeding rather than myocardial infarction and choice 3 would be the best course of action.

# keeping up

## Category 1 Continuing Medical Education Programs Available in Arkansas

### FRONTIERS IN PSYCHIATRY

Presented by Keong Chye Cheah, M.D., co-sponsored by Mid-Continent Psychiatry Association, Arkansas Psychiatry Society, and UAMSC, 8:30 a.m. to 1:00 p.m., September 12-14, 1980, Indian Rock Resort, Fairfield Bay. Eight hours Category I credit. Registration fee: \$50 for Mid-Continent and Arkansas Psychiatry Society members, Psychiatry residents, and spouses; \$75 for others.

### COMMON MANAGEMENT OF STRABISMUS PROBLEMS

Presented by John T. Flynn, M.D., Associate Professor of Ophthalmology, University of Miami School of Medicine, September 19, 9:00 a.m. to 4:00 p.m., and September 20, 9:00 a.m. to 12:00 noon, Red Apple Inn, Heber Springs. Nine hours Category I credit. Registration fee: \$50 if paid before August 15th, \$75 after the 15th. Sponsored by the Arkansas Academy of Ophthalmology.

### GERIATRICS FOR THE FAMILY PRACTITIONER

Presented by Ben N. Saltzman, M.D., September 20, 8:30 a.m. to 5:15 p.m., Education II Building, UAMSC. Seven and one-half hours Category I credit. Registration fee: \$40. Sponsored by UAMSC.

### THE AGING GUT

Presented by E. Clinton Texter, M.D., and G. K. Patel, M.D., September 25-26, 8:00 a.m. to 5:00 p.m., Little Rock Hilton Inn. Twelve hours Category I credit. Registration fee: \$130 (\$40 for VA sponsored physicians). Sponsored by UAMSC.

### INVOLUNTARY MOVEMENT DISORDERS

Presented by Keong Chye Cheah, M.D., October 11 (time undetermined), Americana Inn, Little Rock. Hours of credit and registration fee undetermined. Sponsored by UAMSC.

### TWO DAYS OF INTERNAL MEDICINE

Presented by George Ackerman, M.D., October 17, 8:30 a.m. to 5:00 p.m., and October 18, 8:30 a.m. to 3:30 p.m., Education I Auditorium, UAMSC. Eleven hours Category I credit. Registration fee: \$75 (\$50 for American College of Physicians members).

### TENDON SURGERY FOR THE HAND AND FOREARM

Presented by E. R. Weber, M.D., October 24, 8:00 a.m. to 5:00 p.m., and October 25, 8:00 a.m. to 1:00 p.m., Education II Building, UAMSC. Twelve hours Category I credit.

### RECURRING EDUCATION PROGRAMS

Unless otherwise indicated, programs are for one to one and one-half hours Category I credit.

#### FAYETTEVILLE — AHEC-NW

*Medicine Teaching Conference*, each Saturday, 7:30 a.m., Washington Regional Medical Center.

#### FAYETTEVILLE — VA MEDICAL CENTER

*Radiology Conference*, September 4th and 18th, and October 2nd and 16th, 1:00 p.m., Conference Room.

*Pathology Conference*, September 9, 1:30 p.m., and October 21, 3:00 p.m.

*Mortality Conference*, September 11th and October 9th, 3:00 p.m., Conference Room.

#### FORT SMITH — AHEC

*Tumor Conference*, every Tuesday, 12:00 noon, Fourth Floor Conference Room, Sparks Regional Medical Center.

#### JONESBORO — ST. BERNARD'S REGIONAL MEDICAL CENTER

*Interesting Cases*, second and fourth Tuesday, 12:00 noon, Dietary Conference Room. Sponsored by AHEC-NE.

*Tumor Conference*, third Tuesday, 12:00 noon, Dietary Conference Room. Sponsored by AHEC-NE.

*Medical Lecture Series*, each Friday except third Friday, 11:50 a.m., Dietary Conference Room. Sponsored by AHEC-NE.

*Chest Conference*, third Friday, 11:50 a.m., Dietary Conference Room. Sponsored by AHEC-NE.

#### LITTLE ROCK — BAPTIST MEDICAL CENTER

*Pulmonary Care Conference*, each Tuesday, 12:00 noon to 1:00 p.m. Dining Room #4.

*Central Arkansas Primary Care Conference*, September 9th and October 8th, 7:00 p.m. to 9:00 p.m. Auditorium. Two hours Category I credit.

As organizations accredited for continuing medical education by the Liaison Committee on Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.



*Cardiopulmonary Resuscitation Course*, second Wednesday, 6:00 p.m. to midnight, Human Resource Development Area. Six hours Category I credit.

*Emergency Room Medicine*, first, third and fifth Wednesday, 12:30 p.m. to 1:30 p.m., Conference Room #1.

*Morbidity and Mortality Conference*, first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.

*Surgery Conference*, each Thursday except first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.

#### **LITTLE ROCK — ST. VINCENT INFIRMARY**

*Interhospital GI Problems Conference*, first Monday, 6:00 p.m. to 7:30 p.m., Room E155, Education Wing.

*Pediatric Conference*, first and third Monday, 12:30 p.m. to 1:30 p.m., Room E159, Education Wing.

*Interhospital Urology Grand Rounds*, first Tuesday, 5:30 p.m. to 6:30 p.m., Room E159, Education Wing.

*Peripheral Vascular Disease Conference*, third Tuesday, 6:00 p.m. to 7:00 p.m., Room E155, Education Wing.

*Neuropathology Conference*, third Tuesday, 5:00 p.m. to 6:00 p.m., Room S1169, Laboratory.

*Pulmonary Conference*, first and third Thursday, 12:00 noon to 1:00 p.m., Room E159, Education Wing.

*Cardiology Conference*, second and fourth Thursday, 12:00 noon to 1:00 p.m., Room E159, Education Wing.

#### **LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES**

*Internal Medicine Grand Rounds*, each Tuesday, 8:00 a.m. to 9:00 a.m., Education 1 Auditorium.

*Neuroradiology Conference*, each Wednesday, 4:00 p.m. to 5:00 p.m., Department of Radiology Conference Room.

*Radiology Continuing Education Lecture Series*, two Wednesdays each month, 6:00 p.m. to 7:30 p.m., Department of Radiology Conference Room.

*Categorical Course in Radiology* (beginning September 2nd), each weekday except Wednesday, 4:15 p.m. to 5:00 p.m.; Wednesday, 5:00 p.m. to 5:45 p.m., Department of Radiology Conference Room.

#### **POCAHONTAS**

*Medical Lecture Series*, third Tuesday in October, 7:30 p.m., Randolph County Hospital. Sponsored by AHEC-NE.

#### **WALNUT RIDGE**

*Medical Lecture Series*, third Tuesday in November, 7:30 p.m., Lawrence Memorial Hospital. Sponsored by AHEC-NE.



## **P E R S O N A L   A N D   N E W S   I T E M S**

### **Volunteer Award**

Dr. M. Carolyn Wilson of Mountain Home was among volunteers from across the State honored by KARK-TV and the State Office of Voluntary Citizen Participation.

Dr. Wilson was honored for her work with the hospice program at Mountain Home and Twin Lakes and the Arkansas State Hospice Association which she helped to found. She serves on a volunteer basis as executive director and medical director of the Hospice of the Ozarks home health agency.

### **Surgery President**

Dr. Carl L. Williams of Fort Smith was recently installed as president of the Arkansas Chapter, American College of Surgeons. Dr. Larry Lawson of Paragould was elected to the position of presi-

dent-elect of the Chapter and Dr. Charles Logan of Little Rock was named secretary-treasurer.

### **Physician Speaks**

Dr. John G. Tedford of Little Rock spoke during the August meeting of the Pine Bluff Chapter of the Arkansas Ostomy Association. The title of Dr. Tedford's presentation was "Colostomy and Ileostomy."

### **Board Chairman**

Dr. Raymond Miller of Little Rock has been named chairman of the University of Arkansas Board of Trustees. Dr. Miller has been serving as a board member for eight years and had been vice chairman of the board.

### **Seminar**

Dr. Robert Arrington, Little Rock, was a member of the guest faculty presenting a one-day semi-

nar at the Baxter General Hospital in Mountain Home. The seminar title was "Assessment, Stabilization, and Transport of the Distressed Newborn."

#### **Magnolia Gains Physicians**

Dr. Aubrey Talley has begun practice in Obstetrics and Gynecology at Magnolia. Dr. Talley formerly practiced in Little Rock.

Dr. Frank Roberts has returned to Magnolia after completing a Family Practice residency with AHEC.

#### **Television Special**

Arkansas physicians participated in a television special by KARK-TV Channel 7 and the Ameri-

can Heart Association—Arkansas Affiliate to provide information on heart disease and stroke. Appearing on the program were Dr. Malcolm B. Pearce of Pine Bluff, Dr. James R. McNair of North Little Rock, Drs. David Reding, James K. Cornett, A. J. Thompson, G. Doyne Williams and Jo Etta S. Galbraith, all of Little Rock.

#### **Cancer Cooperative**

Dr. Arthur Hoge of Fayetteville is one of the founders of the newly formed Cancer Cooperative Group of Northwest Arkansas. Dr. Bill Trantum of Little Rock and Dr. James Bledsoe of Rogers recently participated in a program study by the group.



### **NEW MEMBERS**

#### **DR. DURWOOD W. FLOURNOY**

A native of El Dorado, Dr. Durwood Flournoy, has joined the Columbia County Medical Society.

Dr. Flournoy's pre-medical education was at Hendrix College and Arkansas Polytechnic College. He was graduated from the University of Arkansas College of Medicine in 1976. His internship and residency were served at Louisiana State University at Shreveport and a cardiology fellowship was with the Department of Medicine at Louisiana State University School of Medicine.

Dr. Flournoy is board certified. He practices

Internal Medicine at 105 West North Street in Magnolia.

#### **DR. PAUL E. DESROCHERS**

Dr. Paul Desrochers has become a member of the Sebastian County Medical Society. He is a native of St. Flavien, Quebec, Canada.

Dr. Desrochers received a B.A. in 1951 at the Petit Seminaire of Quebec. He was graduated from the Laval University Faculty of Medicine, Quebec City, in 1957. Dr. Desrochers served his internship at St. Sacrement Hospital, Laval Hospital and D.V.A. Hospital in Quebec City. His residency was at Royal Ottawa Hospital, Ottawa Civic Hospital and National Defence Medical Center, Ottawa.

Dr. Desrochers served with the Royal Canadian Air Force from 1955 to 1976. From 1957 to 1971, he practiced with the Canadian Armed Services. Since 1971, he has been a Psychiatric consultant at Centre Hospitalier Chauveau Hospital Notre-Dame, Charny. From 1971 to 1978, he was on the active staff of the Canadian Forces Hospital Valcartier, Hotel-Dieu du Sacré-Coeur, Quebec City, Hotel-Dieu de Rivière-du-Loup. He was medical



director at Valcartier from 1973 to 1976. He also had a private practice in Ste-Foy, Quebec.

Dr. Desrochers practices Psychiatry with Baker Psychiatric Clinic, P.A., at 2112 South Greenwood in Fort Smith.

The Pulaski County Medical Society has added six new members to its roll.

**DR. ANTHONY P. BUCOLO**

A native of Watertown, New York, Dr. Anthony Bucolo received his pre-med education at Canisius College of Buffalo, New York. In 1975, he was graduated from the Georgetown University School of Medicine, Washington, D. C.

Dr. Bucolo's internship and residency in Internal Medicine were at the Rhode Island Hospital of Brown University in Providence. Dr. Bucolo held a Fellowship in Hematology and Oncology at the University of Pennsylvania Hospital prior to coming to Arkansas. He is certified in Internal Medicine.

Dr. Bucolo specializes in Hematology and Oncology. His office is in the Doctors Building at 500 South University in Little Rock.

**DR. BRUCE E. BERRY**

Dr. Bruce Berry was born in Topeka, Kansas. He attended high school in Dardanelle and his pre-med education was at Arkansas Polytechnic College in Russellville.

Dr. Berry was graduated from the University of Arkansas College of Medicine in 1977. His internship was at the University of Arkansas for Medical Sciences Campus. From July 1978 to July 1980, he was in a Radiology residency at the University Medical Center in Little Rock.

Since July 1978, Dr. Berry has maintained an office at 17 Woodstock Court in Little Rock for the general practice of medicine and has practiced Emergency Room Medicine in a number of Arkansas towns.

**DR. C. DON GREENWAY**

Dr. Don Greenway, a native of Paragould, is a graduate of Arkansas State University in Jonesboro. In 1973, he was graduated from the University of Arkansas College of Medicine.

After serving his internship and Internal Medicine residency at the University of Arkansas College of Medicine, Dr. Greenway served a Fellowship in Gastroenterology from 1976 to 1978 at the same institution.

Dr. Greenway is board certified in Internal

Medicine and Gastroenterology. His office for the practice of Gastroenterology is located at 409 North University in Little Rock.

**DR. WILLIAM E. HIGGINBOTHOM, JR.**

Dr. William Higginbothom is a native of Memphis, Tennessee, and a graduate of the University of Arkansas in Fayetteville.

In 1975, Dr. Higginbothom was granted his medical degree by the University of Arkansas College of Medicine. He served his internship at the same institution.

From 1976 to 1977, he served a residency of General Surgery at the University of Arkansas College of Medicine and the Veterans Administration Hospital. From 1977 to 1980, he served an Urological residency at the same two institutions.

Dr. Higginbothom practices Urology at 500 South University, Suite 316, in Little Rock.

**DR. AL W. KELLER**

Dr. Al Keller is a native of North Little Rock. In 1972, he received a B.S. degree from Vanderbilt University in Nashville, Tennessee. He was graduated from the University of Arkansas College of Medicine in 1976.

Dr. Keller served an internship at University Hospital in Little Rock. From 1977 to 1980, he served a residency in Obstetrics and Gynecology at the University of Arkansas College of Medicine.

Dr. Keller practices at the North Little Rock Women's Clinic, 2000 Fendley Drive, North Little Rock.

**DR. RAYMOND A. WENDE**

A graduate of Rice University, Dr. Raymond Wendé is a native of Houston.

In 1969, Dr. Wendé was graduated from the University of Texas Southwestern Medical School in Dallas. He served an internship and General Surgery residency at the University of Texas at San Antonio Teaching Hospitals, Bexar County Hospital District, from 1969 to 1976. Dr. Wendé held a teaching appointment with the University of Texas, M. D. Anderson Hospital and Tumor Institute in Houston during 1977 and 1978. From 1978 to 1980, he served a Plastic Surgery residency at Baylor College of Medicine in Houston.

Dr. Wendé is board certified. He is in the practice of Plastic Surgery at 919 University Towers in Little Rock.

**DR. JAMES P. BELL**

Dr. James Bell, a native of Fort Smith, has

become a member of the Polk County Medical Society.

After graduating from the University of Arkansas at Fayetteville, Dr. Bell attended the University of Arkansas College of Medicine and was granted his medical degree in 1974. He served his internship and residency at University Hospital. Before moving to Mena, Dr. Bell was with the United States Public Health Service, Indian Health Service, in Browning, Montana.

Dr. Bell's office is located at 608 Hickory in Mena. He is in the practice of Internal Medicine and Family Practice.

## COURTESY MEMBERS

### Sebastian County

The Sebastian County Medical Society has added two resident members to its roll. Dr. Michael G. Justus and Dr. Willard Dale Perrymore are in the Family Practice residency program at AHEC in Fort Smith.

### DR. ANTHONY HARDEN

Dr. Anthony Harden has recently become a courtesy member of the Pulaski County Medical Society. Dr. Harden is a Pathology Resident at the University of Arkansas College of Medicine.



## O B I T U A R Y

### DR. DAVIS WOOLF GOLDSTEIN

Dr. Davis W. Goldstein of Fort Smith died June 12, 1980. He was born in Greenville, Mississippi, on September 14, 1888.

Dr. Goldstein studied pharmacy at Tulane University. His medical degree was received from the University of Tennessee in 1910. He spent eight months in Europe visiting dermatological clinics and then returned to the United States and studied in Philadelphia. He located in Fort Smith in 1913.

During World War I, Dr. Goldstein served as a battalion surgeon and as a regimental surgeon. He was cited for bravery in the St. Mihiel and Meuse Argonne offensives.

Dr. Goldstein returned to Fort Smith after the war and was one of the founders of Cooper Clinic. He continued the practice of Dermatology until his retirement in 1969 at age 81.

Dr. Goldstein had been active in many civic and community organizations. He assisted in the organization of the Sebastian County Cancer Society and the National Foundation for Infantile Paralysis. He was a member of the American Legion for sixty years and was a past commander. He was the recipient of the Golden Deeds Award of the Fort Smith Exchange Club in 1954. He was a past president of the Fort Smith Rotary Club.

In 1975, Dr. Goldstein endowed a research fund and library for the Division of Dermatology at the University of Arkansas Medical Center in Little Rock.

Dr. Goldstein served for a number of years on the Arkansas State Board of Health and had served as president of the Board.

He had served as president of the Fifty Year Club of both the Arkansas Medical Society and the American Medical Association. He was a past president of the Sebastian County Medical Society.

Dr. Goldstein was chairman for many years of the Sebastian County Department of Public Welfare and as advisor to the local health department.

He is survived by his wife, Leona.





# Opportunities to Practice Medicine in Arkansas

**BOONEVILLE.** Population 2,700; trade area population 25,000. Opportunity exists for family practitioners to join the established practice with three other physicians. Financial considerations include guaranteed minimum salary with allowance on productivity. Booneville has a 47-bed hospital constructed in 1962 and expanded in 1968.

**MENA.** Population 4,500; county population 15,000. Opportunities exist for family practitioners, internist, or obstetric/gynecologist. The town now has ten physicians (six family practitioners, one surgeon, one pediatrician, and one internist). There is a 57-bed fully accredited general hospital in Mena and two nursing homes with a total bed capacity of 174.

**PARIS.** Population 4,000 in an area of numerous small towns where there is a general shortage of physicians. Opportunities exist in family practice, general surgery, obstetrics/gynecology, and pediatrics. There are presently four practicing physicians in the community, which has a 25-bed hospital. The hospital operates as a satellite of St. Edwards Mercy Medical Center in Fort Smith. Office space and housing are readily available.

**WALDRON.** Population 3,000; a service area of 15,000. Opportunities exist in family practice, general surgery, and anesthesiology. There are presently three physicians serving the area. The community has a 26-bed acute-care hospital with an adjoining 74-bed nursing home.

**CARAWAY.** Population 1,300; trade area of approximately 8,000 population. Opportunity exists for family practitioners. There are presently no physicians in Caraway. The nearest physician is located in Manila, 20 miles away. Caraway has a special program for physician recruitment which includes physician's monthly salary, equipment, supplies, employees, building, malpractice insurance, and management.

**MARIANNA.** Population 6,100; trade area population of approximately 20,000. Opportunities exist in family practice, general surgery, and obstetrics. The community has a 25-bed hospital.

**RECTOR.** Population 2,500; trade area population 9,000. Opportunities exist in family practice. Under the recruitment program, monthly salary, all equipment, supplies, employees, malpractice insurance, and management is supplied. There are presently two family practitioners in the community.

**BRINKLEY.** Population 5,300; county population 16,000. Opportunities exist in family practice, general surgery, internal medicine, and obstetrics. There are presently four physicians practicing in Brinkley. The community has a 40-bed acute-care hospital.

**DES ARC.** Population 2,500; trade area population approximately 12,000. Opportunity exists for a family practitioner. There is one family practitioner currently serving the community and he is near retirement age. Des Arc has a fully equipped clinic building with modern X-ray equipment and adequate facilities for two physicians.

**For further information on these and other opportunities contact**

## **PHYSICIAN PLACEMENT SERVICE ARKANSAS MEDICAL SOCIETY**

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September, 1980

# THE JOURNAL OF THE Arkansas MEDICAL SOCIETY

Vol. 77 No. 4

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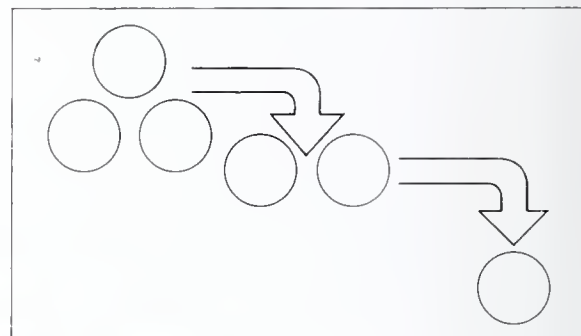
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\*Sellers EM: *Drug Metab Rev* 8(1):5-11, 1978



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Before prescribing, please see summary of product information on next page



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**Indications:** Management of anxiety disorders, or short-term relief of symptoms of anxiety, symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal, adjunctively in skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders, atetosis, stiff-man syndrome, convulsive disorders (not for sole therapy).

The effectiveness of Valium (diazepam/Roche) in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

**Contraindicated:** Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma, may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication. abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed, drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported, should these occur, discontinue drug. Isolated reports of neutropenia, jaundice, periodic blood counts and liver function tests advisable during long-term therapy.

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## Distal Radial Fractures in the Adult

Frank Osborne, M.D.,\* and Edward R. Weber, M.D.\*\*

The purpose of this report is to acquaint the primary care physician with the different types of adult distal radial fractures; which of these can be treated by the practitioner and which of the patients should be referred.

Unfortunately a constellation of eponyms are attached to fractures in this region. This includes Colles', Smith's, reverse Colles', Barton's and reverse Barton's. However, it is clear that: (1) not all fractures of the distal radius are Colles' fractures, and (2) the more comminuted interarticular Colles' fractures benefit from therapy other than closed reduction and casting. The first statement is important not only for communication but more importantly, the treatment is different.

Abraham Colles, in 1814, described the physical and anatomic features of the inverted fork deformity of the fracture which now bears his name. The criteria for a Colles' fracture are: (1) a fracture of the distal one and one-half inch of the radius with or without a fracture of the ulnar styloid, and (2) *dorsal* tilt of the radial articular surface (see Figure 1).

The next most common injury is called the Smith's fracture (sometimes called "reverse

Colles'"). The criteria for a Smith's fracture are: (1) a fracture of the distal one and one-half inch of the radius with or without a fracture of the ulnar styloid, and (2) *volar* tilt of the distal radial articular surface. The Smith's fractures are commonly seen in motorcycle accidents in which the patient is thrown over the handlebars causing flexion and pronation of the wrist. Three types can be identified (see Figure 2). Type one is a noninterarticular *transverse* fracture of the distal radial metaphysis. Type two is a noninterarticular *oblique* fracture of the distal radial metaphysis. Type three is an *interarticular* fracture of the *volar* rim of the distal radius. Type three fracture is usually associated with resultant subluxation of the carpal bones and distal fragment volarward.

The most uncommon fracture in the distal radius is called a Barton's fracture. This is a fracture of the dorsal rim of the radius with subsequent dorsal subluxation of the distal fragment and the carpal bones. One can now see why the Smith's type three fracture is sometimes referred to as "reverse Barton's."

Classification leads naturally to a discussion of treatment. Closed reduction and cast immobilization usually yields satisfactory results in minimally comminuted extra-articular Colles' fractures (see Figure 3). Initial evaluation must be

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Figure 1.

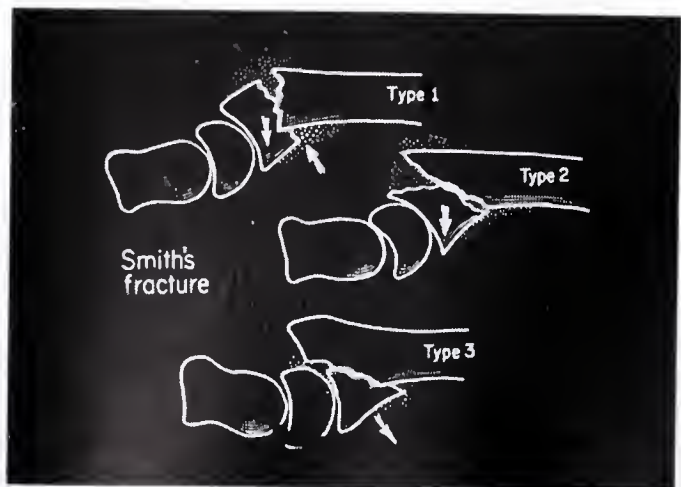


Figure 2.



done including median nerve status after which appropriate anesthesia is instituted. This can be general, axillary block, Bier block or hematoma infiltration. Longitudinal traction is applied by way of finger traps and appropriate amount of counter traction. If anesthesia is satisfactory and if one is patient, the longitudinal traction will accomplish reduction. All that is usually needed is gentle dorsal pressure on the distal fragment to further decrease the dorsal tilt to the normal 0-10° of palmar tilt of the distal radial articular surface. Reduction must accomplish three objectives: (1) end to end apposition of the volar cortices for stability, (2) reduction of the dorsal tilt to at least neutral, and (3) restoration of length of the radius. The reduction must be maintained by three point fixation. A sugar tong splint can best achieve three point fixation. One point of pressure is over the dorso-radial aspect of the distal fragment, the second along the volar aspect of the proximal fragment and the third one will follow automatically along the lateral epicondyle of the humerus. There is no consensus as to the proper positioning of the wrist in the cast or splint, but we believe that the position should approximate 15° of palmar flexion, 20° of ulnar deviation and 20° of supination. We do not use the position of extreme pronation as it does not allow full motion of the metacarpal-phalangeal joints or the interphalangeal joints. Regular follow-up in the first two weeks is imperative for supervision of shoulder motion and to ascertain that the reduction has not been lost. Radial length must be maintained; it is the most important parameter leading to good results. If reduction is lost with subsequent radial shortening, results will be poor with stiffness, pain, and a prominent distal ulna.

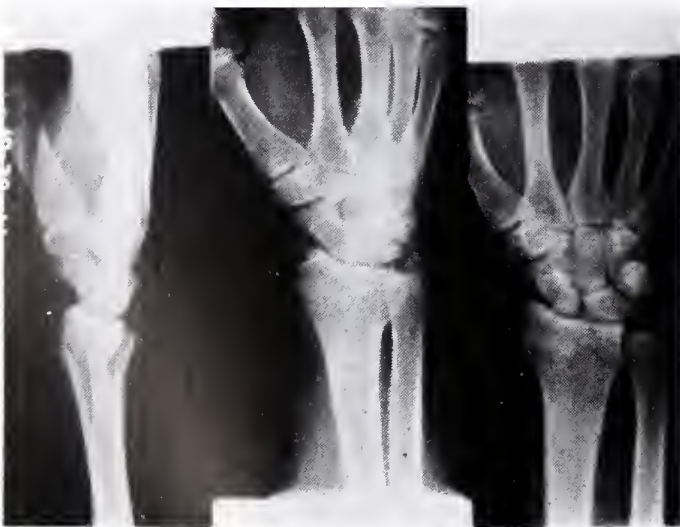


Figure 3.

Figure 4 is a post reduction film seen through a plastic cast of the Colles' fracture seen in Figure 3. Note that there is apposition of the volar cortices, reduction of the dorsal tilt to 0° and restoration of radial length. Immobilization is continued for six weeks.

To achieve the most functional result in the more comminuted interarticular Colles' fractures (see Figure 5), external fixation has been utilized. The distal fragment and especially the dorsal cortex is so fragmented that even three point fixation will not maintain good reduction. Pins and plaster technique has been used most commonly but problems can occur because of the eight weeks immobilization leading to stiffness and the possibility of shortening due to the pins losing the purchase on plaster with time. For these fractures we are currently utilizing a flexible Roger Anderson device as modified by Kenneth Jones, M.D. Two pins are placed percutaneously into the second metacarpal as well as two into the

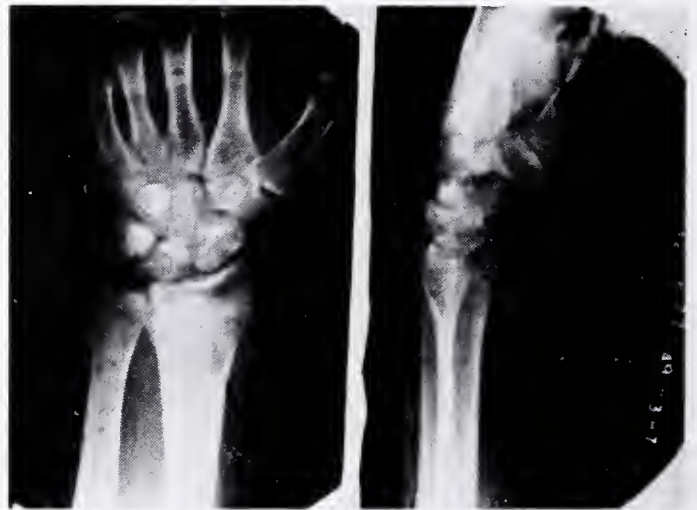


Figure 4.

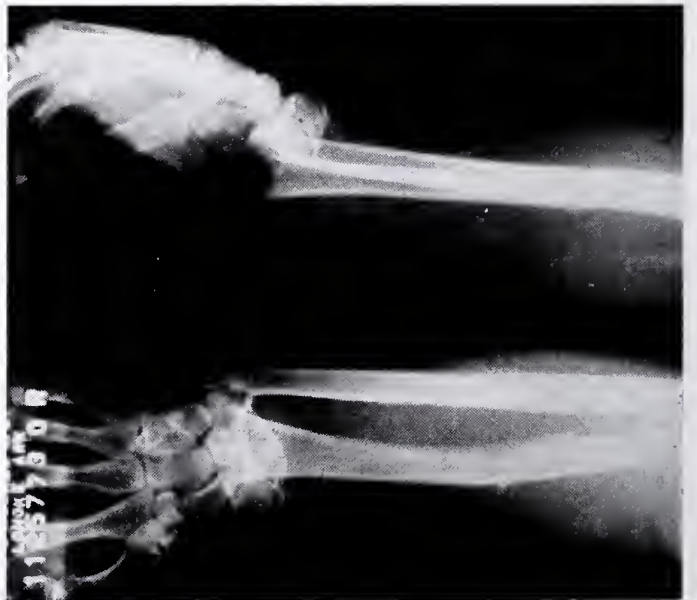


Figure 5.

radius proximal to the fracture site. Length is maintained by metal on metal fixation of the distraction rods through U-joints and flexibility is obtained at the wrist by adding small metal bearings adjacent to the wrist. This apparatus overcomes the two disadvantages of pins in plaster in that it allows for metal on metal fixation which would decrease the chances of radial shortening and also allows for a modest amount of motion at the wrist during the healing process which decreases the chances of stiffness after the fracture has been healed. Post reduction films (see Figure 6) show good alignment of the volar cortices, reduction of the dorsal tilt, and restoration of radial length. It can be appreciated that closed reduction and cast immobilization would not be ideal treatment for this Colles' fracture.

The Smith's type one fracture can usually be treated well with longitudinal traction, closed reduction, and application of a sugar tong splint or long arm cast. This is because the fracture line is transverse and therefore should be inherently stable with reduction.

The Smith's type two fracture can usually be

treated similarly to type one. However, it must be recognized that the fracture line is oblique and therefore stability may need augmentation with either open or closed internal fixation. Figure 7 shows a comminuted Smith's type two fracture, prereduction. Figure 8 is a lateral x-ray after open reduction and internal fixation.

The Smith's type three fracture is interarticular and reduction is very difficult to maintain with cast technique. Therefore internal fixation, either with open reduction or percutaneous pinning, is recommended with these fractures. Figures 9 and 10 show AP and lateral of a Smith's type three

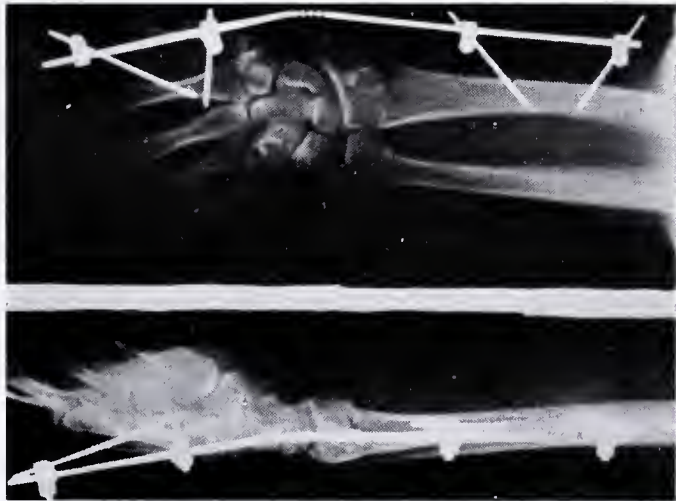


Figure 6.



Figure 7.

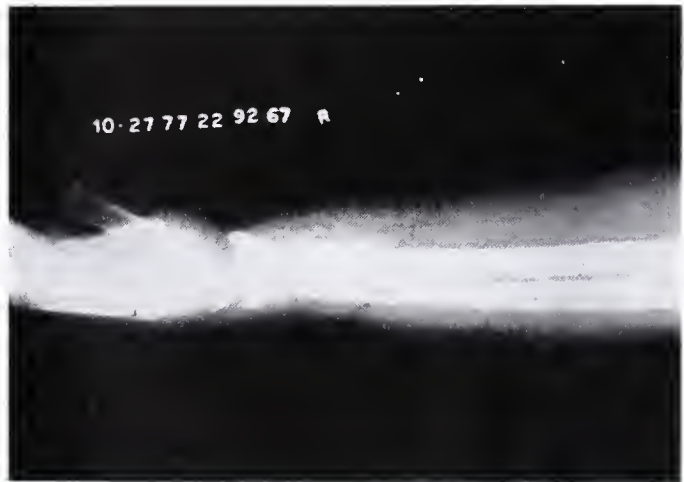


Figure 8.



Figure 9.

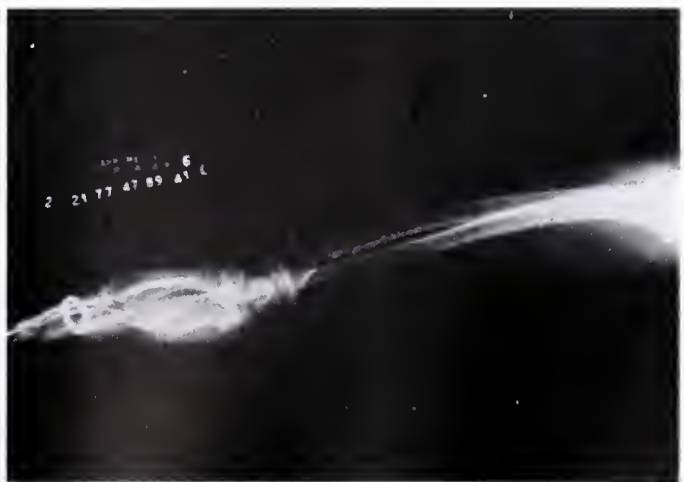


Figure 10.



fracture which shows the volar subluxation of the carpal bones and distal fragment. Figures 11 and 12 show intraoperative x-rays after closed reduction and percutaneous pinning.

The Barton's dorsal rim fracture is treated in principle similar to the Smith's type three fracture, and therefore the dorsal subluxation of the fragment and carpal bones should be reduced and held with internal fixation (see Figure 13).

In conclusion: (1) Not all fractures of the distal radius are Colles' fractures and cannot be treated as such. (2) Close follow-up and repeat x-rays are necessary. (3) Minimally comminuted noninter-articular Colles' fractures in Smith's type one fractures can be treated satisfactorily with closed reduction and casting. (4) The comminuted inter-articular Colles', Barton, Smith's type two and three should be referred.

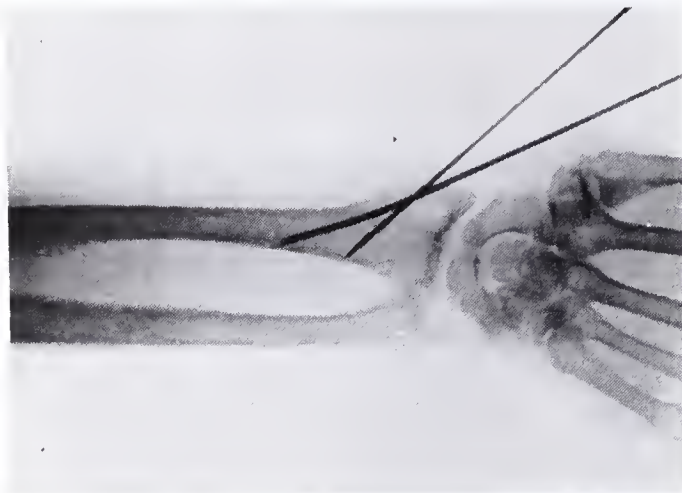


Figure 11.



Figure 12.

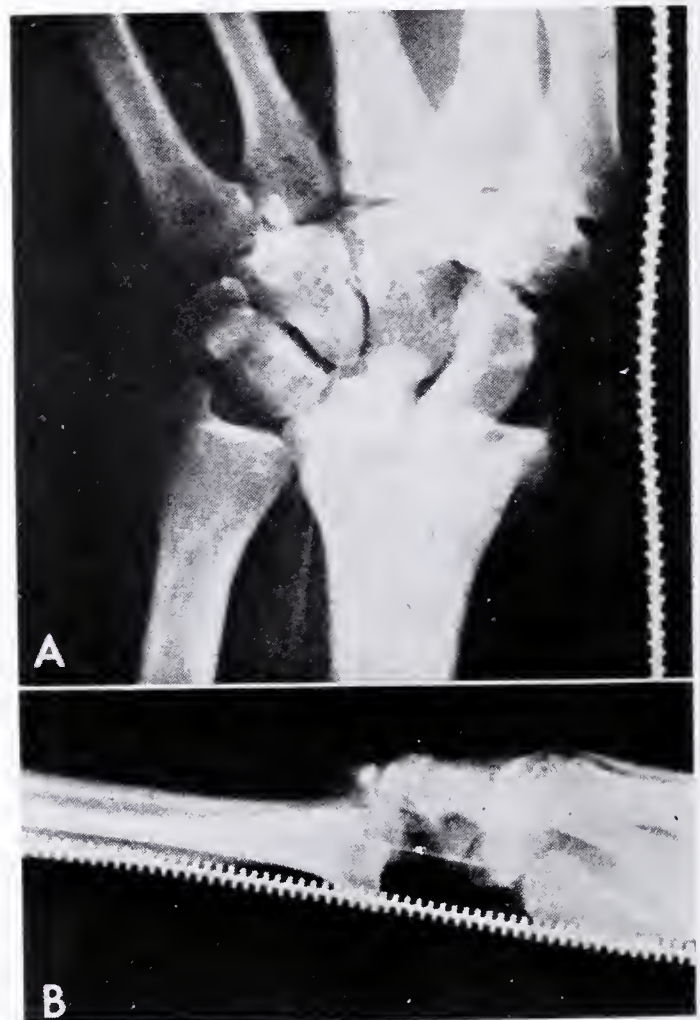


Figure 13.



# Two Days of Internal Medicine\*

## "Systemic Lupus Erythematosus"

Eleanor A. Lipsmeyer, M.D.\*\*

Over the last few years, diagnosis, classification, and treatment of Systemic Lupus Erythematosus (SLE) have been facilitated by the advent of new laboratory tests and new therapeutic modalities. In 1971, the American Rheumatism Association<sup>1</sup> publicized the 14 criteria for the classification of SLE. These are shown in Table 1.

Using these criteria, Fessel<sup>2</sup> studied the population of the Kayser Foundation Health Plan to determine incidence of SLE. Annual incidence

(new cases per year) is 7.6 per 100,000 persons. In the general population, one patient in 1969, and one woman in 1000 patients will have SLE. In women, ages 15-64, one in 700 has SLE and in black women, ages 15-64, criteria for SLE are present in one of 245 patients. Thus, blacks have lupus three times more frequently than their representation in the general population. Table 2 shows the frequency of the occurrence of criteria for lupus. Arthritis or arthralgia occurred in 95% of the patients. Hematologic abnormalities occurred in 55% of patients. In these are included many cases of leukopenia with white counts of less than 4000 cells/mm<sup>3</sup>. Raynaud's phenomenon occurred in 16%; lupus accompanied by Raynaud's phenomenon is less severe. Cellular casts occurred in the urine in 11%; proteinuria in the nephrotic syndrome range occurred in 3% of patients. Over 90% of these patients survived for 10 years. Many males had only one criteria; only 11% of the entire lupus population were males.

TABLE 1.

### CRITERIA FOR CLASSIFICATION OF SLE

- 1) Facial erythema (Butterfly Rash)
- 2) Discoid lupus
- 3) Raynaud's phenomenon — two-phase color reaction
- 4) Alopecia — rapid loss of large amount of scalp hair
- 5) Photosensitivity — unusual skin reaction from exposure to sunlight
- 6) Oral or nasopharyngeal ulceration
- 7) Arthritis without deformity — one peripheral joint involved with any of the following in the absence of deformity: pain on motion, tenderness, effusion or periarticular soft tissue swelling
- 8) L.E. cells — two or more classical L.E. cells seen on one occasion, or one cell seen on two or more occasions
- 9) Chronic false-positive STS
- 10) Profuse proteinuria — > 3.5 gm/day
- 11) Cellular casts — red cell, granular, tubular, or mixed
- 12) Pleuritis — history of pleuritic pain or rub heard by a physician; or x-ray evidence of pleural thickening and fluid, or pericarditis, documents by EKG or rub
- 13) Psychosis or convulsions
- 14) Hemolytic anemia; leukopenia — WBC < 4,000/cu mm; thrombocytopenia, platelet count < 100,000/cu mm

### ANTINUCLEAR ANTIBODY TESTS

Four types of antinuclear antibody tests (ANA)<sup>3</sup> patterns have been identified (Table 3): Diffuse staining which represents antideoxyribonucleo-

TABLE 2.

### FREQUENCY OF OCCURRENCE OF CRITERIA FOR SLE

Frequency	%
Arthritis .....	95
Hematologic abnormalities .....	55
LE cells .....	47
Discoid lupus erythematosus .....	38
Serositis .....	34
Alopecia .....	33
Sun-sensitivity .....	27
Facial erythema .....	19
Raynaud's phenomenon .....	16
Psychosis/epilepsy .....	13
Chronic biologically false-positive test for syphilis .....	13
Cellular casts in urine .....	11
Oral ulcers .....	8
Proteinuria (> 3.5 gm/24 hr) .....	3

\*Presented by Department of Medicine, University of Arkansas College of Medicine, 4301 West Markham, Little Rock, Arkansas 72201, September 7-8, 1979.

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protein (anti-DNP) and is responsible for a positive LE cell test. It is positive in many collagen-vascular diseases and in drug-induced lupus. Rim pattern represents the staining of double-stranded DNA. Anti-dsDNA antibody occurs only in SLE. Nucleolar pattern represents antibody against components of the nucleolus. Speckled fluorescence represents antibody against Smith antigen (Sm ag) or against ribonucleoprotein (RNP).

If the ANA presents speckled fluorescence, antibody against Extractable Nuclear Antigen (ENA) should be determined. Absence of antibodies to ENA in this case may be associated with Sjogren's Syndrome or Scleroderma. If antibodies to ENA are present, the antigen is treated with RNase and the test is repeated. If the specificity is lost with RNase, or sensitive to RNase, it indicates that the antigen is Ribonucleoprotein (RNP). Thus the serum being tested contains anti-RNP antibody which is usually found in mixed connective tissue disease.<sup>4,5</sup> If the antigen is resistant to RNase it is Smith antigen (Sm ag), usually associated with SLE.

The characteristics of mixed connective tissue disease are Raynaud's phenomenon, swollen hands and myositis. This diagnosis usually indicates that the patient will respond to fairly small doses of corticosteroids. Two-thirds of these patients have diffuse interstitial fibrosis and two-thirds have esophageal abnormality. From 5-10% of these patients have renal disease.

The finding of anti-dsDNA is becoming more important in patients with lupus. It is important in initial diagnosis; and in following the course of the patient. If DNA binding capacity (anti-dsDNA) is present in the serum, it usually indicates that the patients are preparing for a flare; when it falls, it usually signals the onset of clinical disease. If complement falls at the same time, renal disease is usually occurring. In patients with psychosis, levels of antibodies against dsDNA will

differentiate steroid psychosis from SLE nervous system disease. Any event which releases DNA into the circulation; sunburn, delivery of an infant, or sepsis, can trigger a flare in these patients since it provides free DNA as an antigen.

Measurement of anti-DNA binding activity by radioimmunoassay has been difficult and is not generally available. A new test utilizing immunofluorescent techniques is now available. *Crithidia luciliae*<sup>6</sup> is a hemoflagellate, protozoan, pathogen for the blow fly. The nucleus and kinetoplast both contain double-stranded DNA. If patient serum attaches to the organism, and then produces immunofluorescence, the patient is said to have antibody against double-stranded DNA.

The severe disease of SLE is caused by immune complexes of dsDNA-anti-dsDNA deposition in the glomerular basement membrane or in the vessel wall. After deposition they activate complement, which produces chemotaxis of polymorpholeukocytes which degranulate and release lysozymes. Cells in the reticuloendothelial system (RES) have Fc receptors which combine with circulating complexes. Complexes usually adhere to the RES and are removed from the circulation. In active SLE, Fc receptor function is depressed, leading to prolonged circulation of immune complexes and contributing to tissue deposition and damage.<sup>7</sup>

Renal disease with immune complex may be predicted by the onset of pleurisy.<sup>8</sup> Patients rarely have CNS or renal disease when they develop pleurisy. After an episode of pleurisy, a patient is three times as likely to develop proteinuria or rising serum creatinine. These patients must be observed very closely for the onset of renal disease.

The changing mortality in SLE was reported by Dubois, et al<sup>9</sup> and is detailed in Table 4. In the first period reported, 1950-1955, the survival rate for three years was 9%. In the period from 1956-1962, the three-year survival rate was 27%;

**TABLE 3.**  
**ANTINUCLEAR ANTIBODIES**

Pattern	Antibodies	Disease
Diffuse	Anti-DNP	DLE, RA Drug-induced LE
Rim	Anti-dsDNA	SLE
Nucleolar	Anti-nucleoli	Scleroderma
Speckled	Anti-Sm	SLE
	Anti-RNP	SLE, MCTD

**TABLE 4.**  
**CHANGING MORTALITY IN SLE**

Cause of death	% of Patients		
	1950-1955	1956-1962	1963-1973
Uremia	26.8	36	13.3
CNS	26.8	11	7.8
Malignancy	1.8	2	6.7
Infection	16.1	12	17.8
Other	28.5	39	54.4

and the period from 1963-1973, the rate was 88%. Renal failure is the most frequent cause of death in patients with diffuse proliferative glomerulonephritis, but does not occur frequently in focal glomerulonephritis nor in membranous glomerulonephritis. Death from infection occurred at the same rate, but the organisms causing death changed from gram-positive to resistant gram-negative opportunistic organisms. The incidence of death from malignancy, myocardial infarction and suicide grew from 4% to 18%. The average survival after diagnosis increased from less than one year to eight and one-half years. High-dose steroids, dialysis, and transplantation have improved this survival rate.

### THERAPY

Current therapy consists of anti-inflammatory drugs, corticosteroids, and immunosuppressive agents. Aspirin is the drug of choice for arthralgia. Some of the newer nonsteroidal anti-inflammatory agents, such as Motrin, may cause fever in patients with ibuprofen. Chronic active hepatitis may occur in patients with lupus taking aspirin, and liver function tests should be monitored. Hydroxychloroquin, Plaquenil, is an antimalarial which has anti-inflammatory properties. Ophthalmologic examination is required every four to six months to monitor for retinal and macular change. In a retrospective study,<sup>10</sup> the number of flares patients with lupus had on and off hydroxychloroquin were determined. The patients had more flares while off the drugs; but no steroid-sparing effect was noted.

In using corticosteroids, we feel alternate-day regimens should be used for nephritis and nephrotic syndrome. Once-a-day steroids may be used for vasculitis and myositis; steroids given every six hours should be reserved for hemolytic anemia, thrombocytopenia, and CNS disease. "Pulse" therapy<sup>11</sup> is a new method of administration in which one gram of methylprednisolone is given IV bolus for three days for rapidly progressive lupus nephritis. Five of seven patients given steroids in this way improved and maintained improvement in their serum creatinine. A later abstract<sup>12</sup> described 28 patients with lupus treated in this manner. Twenty-five of them had renal disease and three had unspecified non-renal disease. In the 25 patients with renal disease, four had rapid improvement, four required dialysis, and one died. At the end of four months, nine of 18 remaining patients had continued maintenance

of their serum creatinine. Non-renal disease did not respond.

The use of cytotoxic drugs, cyclophosphamide, azathioprine, chlorambucil are still controversial and have not been shown to increase survival.

Plasma exchange and plasmapheresis is currently being done in centers around the world and data is not yet sufficient for determination of efficacy of the procedure.

### SUMMARY

Criteria for classification have allowed physicians to determine incidence and prognosis of SLE. Corticosteroids remain the drug of choice for severe lupus; if there are no symptoms of immune complex disease, the patients should be managed with non-steroidal anti-inflammatory drugs; including aspirin and/or hydroxychloroquin.

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# Results of 1254 Intraocular Lenses

Edwin Olmos Z., M.D.,\* and F. Hampton Roy, M.D.\*\*

This paper reviews the results of 1254 lens implants performed from April, 1975 to February, 1979 by Dr. Roy. Dr. Olmos has been working with Dr. Roy as a preceptor for the last two years. He and the office staff retrieved this data from the patients' charts in order to correlate the results of the intraocular lens survey. Our results are similar to other authors.<sup>1,2,3</sup>

## Patient Population

In this series of 1254 intraocular lens implants, the average age of the individuals was 67.54 years of age. The ages ranged, however, from 18 months of age to 97 years of age. 92% of the implants were performed on people between 50 to 90 years of age.

45.88% of the patients were male and 54.12% were female. This is probably a reflection of the fact that women have a tendency to live longer than men and most cataracts are done in older individuals.

Of the 1254 implants done, 220 were bilateral implants, and therefore this study involves 1034 patients.

## Type of Surgery

95% of the 1254 implants had a planned extracapsular cataract surgery. Of this 95%, 10.64% had a phacoemulsification cataract extraction and 85.32% had a planned extracapsular cataract extraction. This technique is preferred in individuals over the age of 60 because the nucleus of

the cataract is usually too hard to remove through a small (3 mm) incision with an ultrasonic hand-piece (phacoemulsification).<sup>4</sup> (Figure 1)

4.4% of the 1254 implants had an intracapsular cataract extraction and 3.6% had already had cataract surgery and the implant was done as a secondary procedure.

## Technique of Planned Extracapsular Cataract Extraction and Implantation of Intraocular Lens

The planned extracapsular cataract extraction is performed by making a conjunctival incision from approximately 10 to 2 o'clock (superior portion of the eye). A 3 mm incision is made into the anterior chamber. An opening is made in anterior capsule of the lens with a cystotome (a small hook-like instrument). (Figure 2) The incision is then enlarged with scissors to 15 to 17 mm (10 to 2 o'clock). (Figure 3) A lens loop is

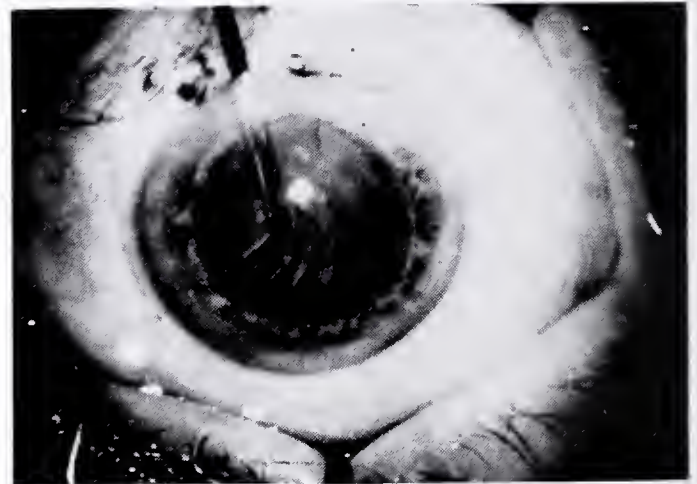


Figure 2.  
The cystotome is used to open the anterior capsule.



Figure 3.  
The corneoscleral scissors are used to enlarge the incision so that the nucleus of the cataract can be removed and the lens implant can be inserted.



Figure 1.  
The phacoemulsifier is used to break up cataracts that are soft. Soft cataracts are usually found in individuals under 60 years of age.

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used to remove the nucleus of the cataract. (Figure 4) The irrigation and aspiration handpiece is used to remove the remaining cortical fibers. (Figure 5) A plastic glide is placed between the anterior and posterior capsule. The intraocular lens is placed into the eye and centered, and Miostat® is then used to constrict the pupil. (Figure 6) Two peripheral iridectomies are done to allow the free flow of aqueous. The wound is then sutured with a continuous 10-0 nylon suture. (Figures 7 and 8)



Figure 4.  
The lens loop is used to remove the nucleus of the cataract.

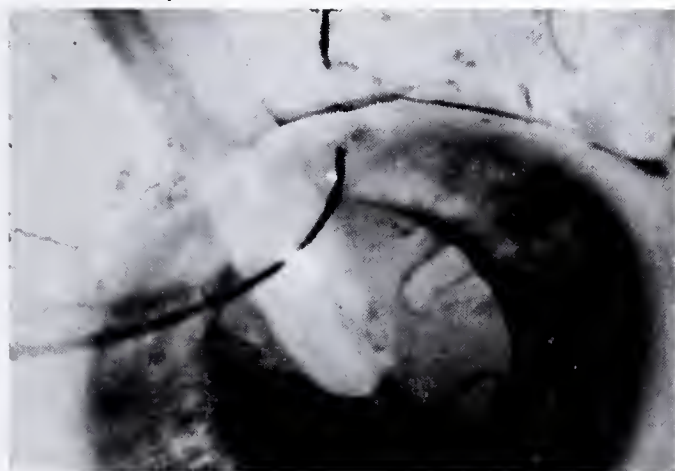


Figure 5.  
The irrigation and aspiration handpiece of the phacoemulsifier is used to remove the remaining cortical fibers of the cataract.

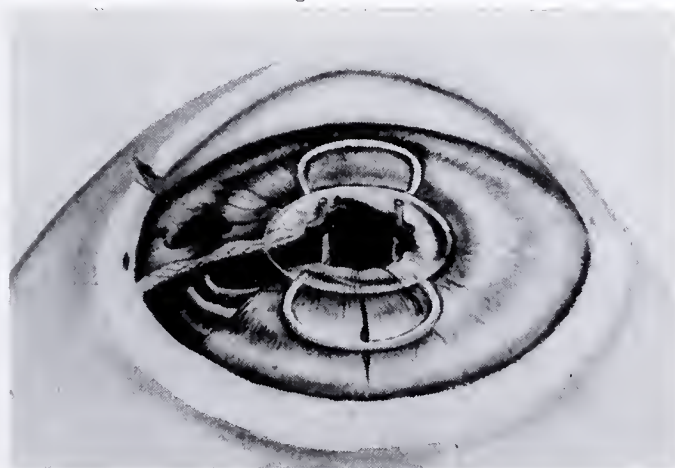


Figure 6.  
A four loop cross lens is held in place between the anterior and posterior capsule which seals in the lower loop and stabilized with the anterior loops resting on the iris.

### Type of Implant

The intraocular lens comes in many different styles and strengths. Over 77% of the lenses used in this survey were two loop Binkhorst lenses. (Figure 9) 19.5% of the lenses used were four loop cross (Fyodorov-Binkhorst lens).<sup>5</sup> (Figure 10)

The Xenotec A-scan ultrasound was used to determine the length of the eye in most cases. (Fig-

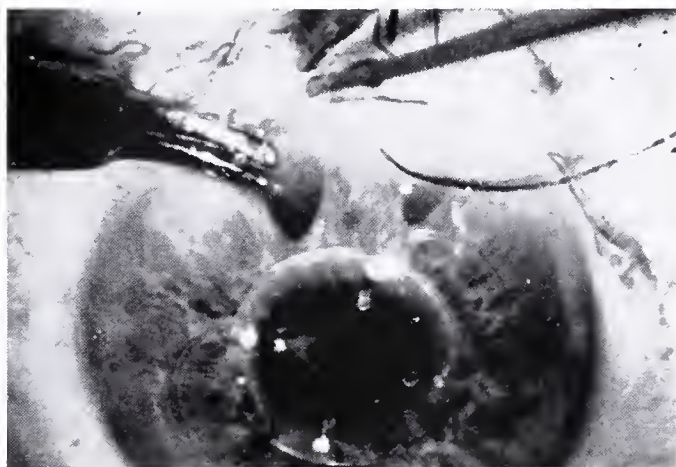


Figure 7.  
A continuous 10-0 nylon suture is used to close the wound.

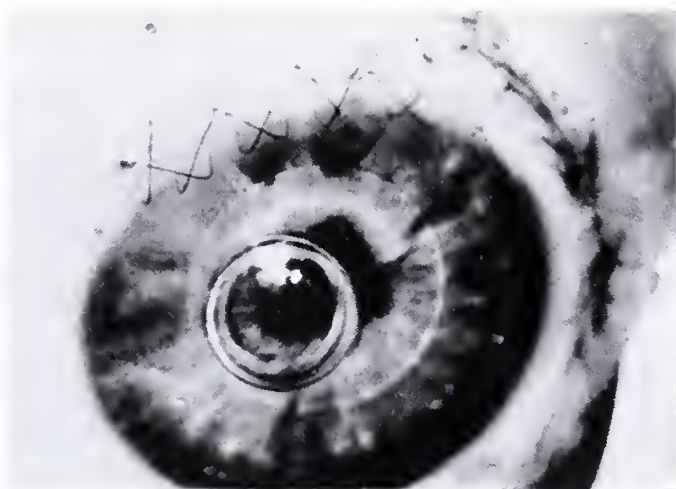


Figure 8.  
An air bubble is frequently used to keep the anterior chamber formed postoperatively. The air bubble will absorb in three to four days. The nylon suture knot is tied into the wound to decrease patient discomfort.

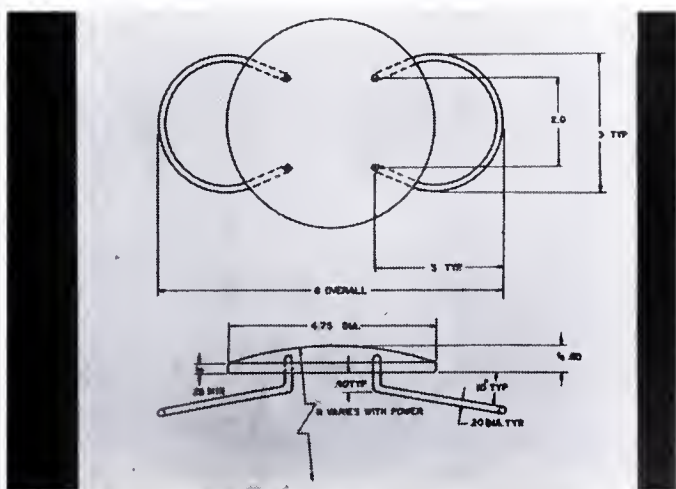


Figure 9.  
The two loop Binkhorst intraocular lens was used in 77% of the procedures performed in this survey.



ure 11) This length of the eye, plus the curve of the cornea, was then programmed into one of several computers to determine the strength of intraocular lens used. (Figures 12 and 13)<sup>3</sup> The strength of intraocular lens used ranged from a +13 diopter to +22.5 diopter. Over 46% of the lenses used were 19 to 19.5 diopters in strength.

#### Postoperative Complications

2.01% of the 1254 intraocular lens implants dislocated. It was possible in 40% of the dislocations to reposition them medically by dilating the pupils, repositioning the intraocular lens, and then constricting the pupils. In 60% of the dislocations it was necessary to reposition the intraocular lens surgically.

Approximately 4% of the 1254 intraocular lens implants necessitated opening a secondary membrane. A secondary membrane is tissue composed of regenerated lens fibers, fibrin, or inflammatory material which grows across the posterior capsule, and decreases visual acuity. When this occurs it is necessary to make an opening in the posterior capsule (capsulotomy) to give a clear visual axis.



Figure 10.

19.5% of the lens used were four loop cross Eyedorov-Binkhorst style lens.

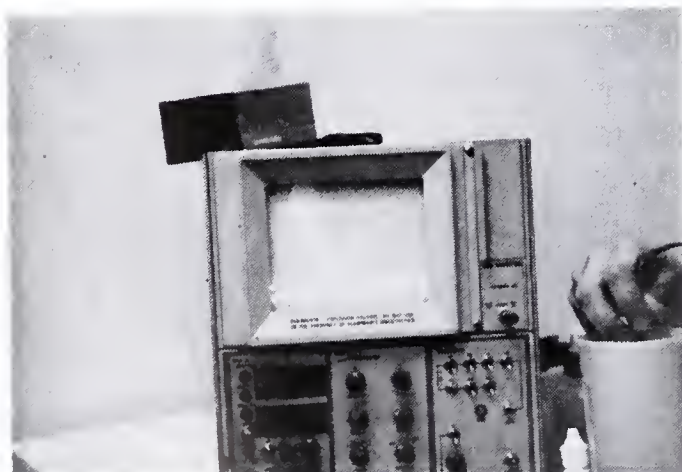


Figure 11.

The Xenotec A Scan ultrasound uses a beam of sound to measure the axial (Anterior-Posterior) length of the eye.

In this series the average time of the capsulotomy was 34 weeks after surgery, but varied from one week up to 160 weeks after the surgery. Most of these capsulotomies were done in the office with a Mentor operating microscope and a Spizzuri-Ruzzetti needle knife.

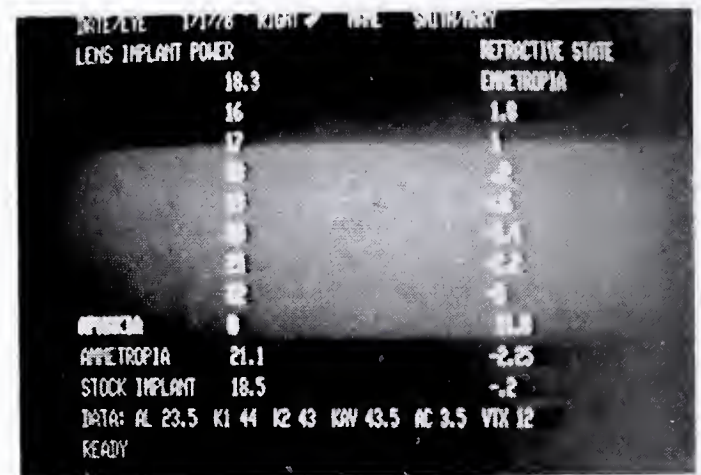
0.54% of the 1254 intraocular lens implants had postoperative retinal detachments. In 85.7% of the retinal detachments, vitreous was lost at the time of surgery. Retinal detachments following cataract surgery, as many authors have reported, are most common following vitreous loss.

1.12% of the 1254 intraocular lens implanted had to be removed. The most common reason for the lens having to be removed was chronic ocular inflammation. 0.08% of the 1254 intraocular lens implanted had to be exchanged for another intraocular lens.

0.32% of the 1254 intraocular lens implanted required a corneal transplant postoperatively.

#### Postoperative Results

80% of the 1254 intraocular implants had visual



acuity of 20/40 or better postoperatively.

Of the 20% of the cases that had visual acuity less than 20/40 postoperatively, 16% had pre-existing ocular problems. These included senile macular choroidal degeneration (8.45%), retinitis pigmentosa (.13%), amblyopia (.68%), preoperative retinal detachment (.40%), optic atrophy (2.55%), and macular hole (.81%). Therefore, 96% of the intraocular lens implants done in this survey were successful.

### Summary

This is a report of 1254 intraocular lens implants with an average following of 36.5 weeks. This includes all cases completed from April, 1975 to February, 1979 by one surgeon. Intraocular lens implantation is shown to be a safe and effective procedure in experienced hands.

### Acknowledgment

We would like to acknowledge the assistance of Susan Young, Renee Massey, Ruthanne McVey, Nanette Webb, Dotty Harrell, Zenobia Gillespie, Liz Parker, and Betsy Perry.

The drawing was completed by Mr. Ron Trimble.

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# Office Orthopaedics

## Calcific Tendinitis of the Wrist

Philip H. Johnson, M.D.\*

Tendinitis is a frequent occurring entity in the shoulder associated with calcification at the insertion of the supraspinatus tendon. It has also been recognized and reported occurring about the elbow, knee and hip. Tendinitis involving the wrist and hand, however, is much less common. Sandstrom<sup>6</sup> reported 329 cases of calcific tendinitis, 259 involved the shoulder, but only eight occurred about the wrist and hand. Cohen<sup>2</sup> in 1924, was the first to describe calcium deposited at the insertion of the flexor carpi ulnaris where it was mistaken for a fracture of the pisiform. In 1938, Milch and Green<sup>3</sup> reported four acute cases of tendinitis where calcium was present at the insertion of the flexor carpi ulnaris and they described it as a distinct clinical entity. Seidenstein<sup>7</sup> in 1950 reported fifteen cases of acute tendinitis in the hand and wrist associated with calcific deposits. Eight of these cases involved the flexor carpi ulnaris at the pisiform.

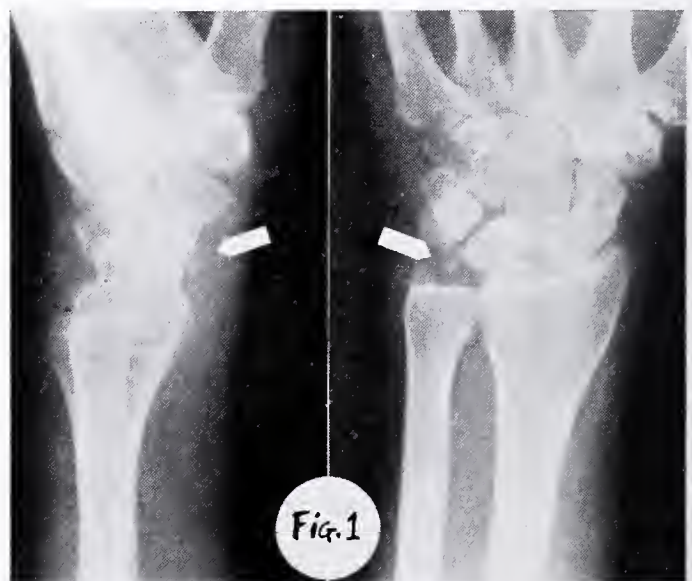
Carroll and Sinton<sup>1</sup> published their experience with 100 cases of acute tendinitis associated with calcium deposits about the hand. Thirty-seven of these were located at the insertion of the flexor carpi ulnaris. Less consistent was the location of the other cases. The long digital flexors and extensors about the wrist were infrequently involved. Calcium deposits in the palm were usually present at the insertion of the short intrinsic muscles. When present in the fingers, deposits were in the supporting collateral ligaments at each interphalangeal joint.

This acute clinical entity can occur in several locations about the hand and wrist, but statistically, it is more commonly seen in the insertion of

the flexor carpi ulnaris at the pisiform. Phalen<sup>5</sup> referred to this clinical syndrome as "calcified pisiform bursitis."

### CLINICAL

A dramatically debilitating pain rapidly increases over a period of hours, becoming intense. This pain is associated with localized swelling, pronounced over the area of the calcific deposit. The swelling soon involves not only the area about the pisiform but the entire wrist. Redness, warmth, and later induration occur as the pain intensifies. The patient is usually age 30 to 60 and is first seen cradling the involved wrist in the other hand to protect it from a painful jolt. There is usually no history of precipitating trauma or injury. Lymphangitis is rarely seen and regional lymphadenopathy has never been reported. Gentle palpation of the area will hesitantly be permitted by the patient. The examiner will find an area of exquisite tenderness over the pisiform bone. X-rays of the wrist (Figure 1) will show calcification in the soft tissues near the pisiform.



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Usually a homogenous, small, 1-2mm. area of calcium is seen with soft tissue technique. Rarely it may be 3-4mm. or larger. Paresthesias in the fourth and fifth fingers occur very rarely from ulnar nerve compression.

### DIAGNOSIS

The diagnosis is usually simple if this entity is suspected. Sudden severe pain present in the wrist associated with swelling, weakness of grip, and exquisite tenderness over the pisiform. There is no history of trauma or skin penetration and the patient is over 30 years of age. Oblique X-rays with the pisiform in profile show a variable size calcific deposit.

Differential diagnosis is usually not a problem. Though the wrist appears to be involved in a cellulitis or pyogenic infection, it is in fact a sterile chemical abscess. The X-rays may suggest a chip fracture but there is no history of trauma. An accessory ossicle would not be the center of this dramatic clinical picture. Acute gout with tophi would be extremely rare in this location without other joint involvement. The clinical picture above described in an otherwise normal, healthy individual will not be confused with calcification of soft tissues about the hand from scleroderma or Raynaud's phenomena.

### PATHOLOGY

The pathogenesis of calcium salts in tendons was suggested in 1915 by Moschcowitz<sup>4</sup> in a paper describing the histopathology of calcification in the infra and supraspinatus tendons. He demonstrated hyaline degeneration and necrosis preceding calcification. Probably a slight rent occurs in an aging degenerate area of tendon (or ligament). This necrotic area is susceptible to the deposition of calcium salts (calcium phosphate and calcium oxydate). A "furuncle of calcium" is formed which is extremely irritating to the surrounding soft tissues. It has the consistency of toothpaste, just as in the shoulder. This same pathologic process is responsible for calcific tendinitis syndromes in the shoulder, hip and elsewhere. Calcium however is not well tolerated in the hand and wrist and is never present in an asymptomatic form. Phalen,<sup>5</sup> in 1952, reported on four typical cases, one of which was operated. A 3mm. size deposit of calcium was removed from within the tendinous insertion of the flexor carpi ulnaris. Microscopic examination of the tissue removed at the time of surgery revealed focal areas of degeneration of fibrous tissue with irregular

areas of amorphous calcified material. Peripheral zones revealed increased cellularity similar to a rheumatoid nodule but without true pallsading of the cellular elements.

### TREATMENT

Calcified tendinitis at the wrist, like in other areas, is a self-limited disease. Any form of treatment therefore must recognize this basic fact. Carroll, et al, found that without treatment, pain would persist for approximately three weeks. Injection and dispersment of the calcific deposit, usually with a local anesthetic, is the preferred treatment. Be careful to avoid injury to the ulnar nerve and artery immediately adjacent to the tendon and pisiform. A cortisone preparation included with the anesthetic may exert some anti-inflammatory effect. Relief of pain after injection is dramatic. Immobilization and periodic warm water soaks seems to aid in resolution of swelling and inflammation. Serial X-rays are unnecessary but would demonstrate complete resorption of calcific deposits in one to three weeks in the great majority of cases. Larger deposits may require three months. Recurrences unlike tendinitis in the shoulder have not been reported.

Radiation therapy and surgery are both proven effective treatments, but do not seem justified, except in rare instances.

### SUMMARY

Acute calcific tendinitis of the flexor carpi ulnaris is a distinct clinical entity. The diagnosis is based on strong clinical suspicion and the X-ray demonstration of a calcific deposit near the pisiform. Treatment produces dramatic and gratifying results.

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# ELECTROCARDIOGRAM

# OF THE MONTH



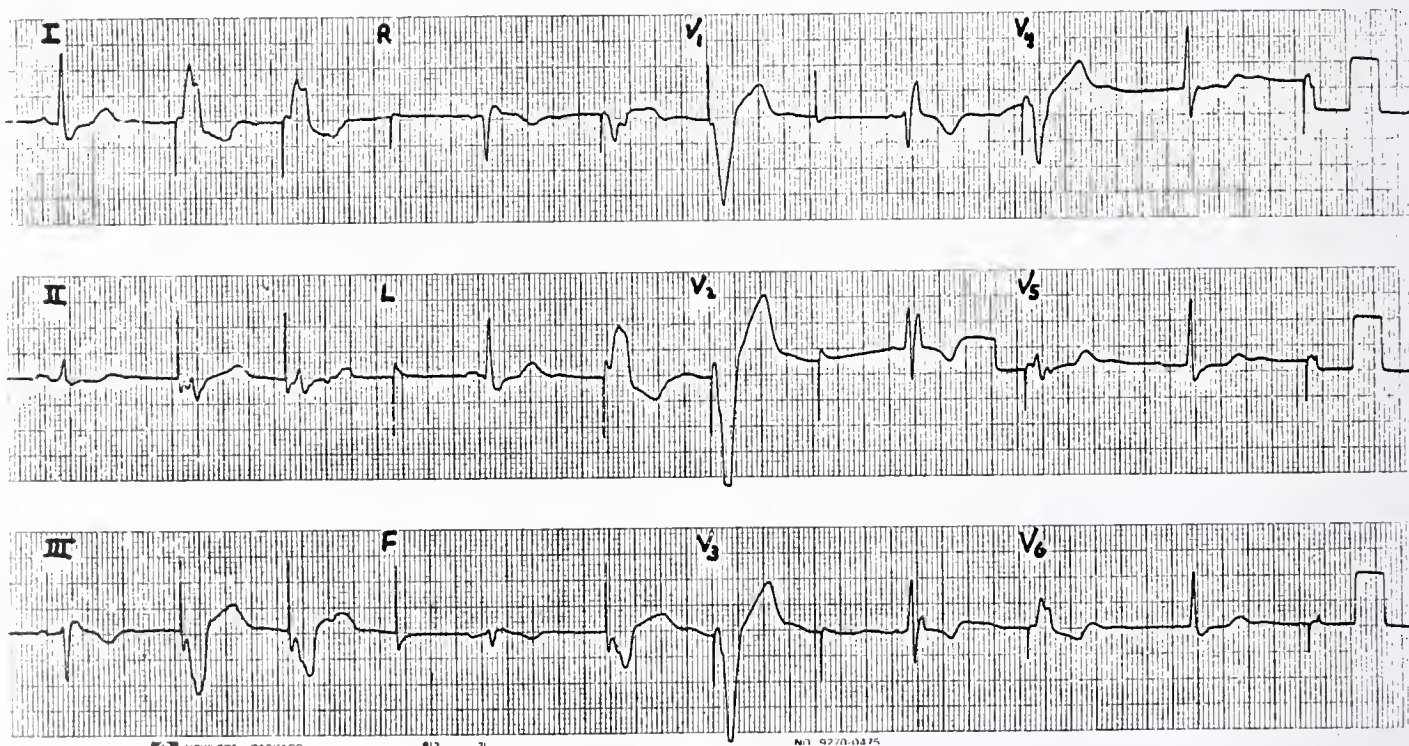
The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 187)

**HISTORY:** Mr. O. is a 74-year-old man who presented initially because of syncope three years prior to his present illness. Trifascicular disease of his conduction system was established and transvenous permanent demand pacing was initiated. Because of difficulty in maintaining a stable lead position, the patient had epicardial lead implantation and did well for the next three years. Three days prior to this admission, he again experienced syncope. His ECG on admission is shown below.

Which of the following statements are true and which are false:

- A. His native beats are in right bundle branch block configuration.
- B. His paced beats are in left bundle branch block configuration.
- C. He has appropriate sensing and capture.
- D. He has intermittent failure to sense properly.
- E. He has intermittent failure to capture properly.



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# Pediatric Review:

## Developmental Screening for the Pre-School Age Child: Practical Recommendations

Patrick H. Casey, M.D.,\* and Robert H. Bradley, Ph.D.\*\*

The first in this series of two papers over-viewing children's development documented the contribution of both the infant and his environment in determining his ultimate developmental potential. The infant and his environment were presented as opposite poles of a *transactional* spectrum; problems in either end of this spectrum create the potential for developmental abnormalities, but the probability that these abnormalities will occur increases significantly when there are problems in both ends of the spectrum simultaneously. The current paper describes the role of the primary care physician in screening for problems in the child and the environment, describes some instruments available for this purpose, and provides recommendations for a screening schedule.

The goal of screening for any medical problem is to identify accurately the largest number of people in the general population who suffer from that problem in the easiest, least expensive way. Identification is necessary to provide the treatment which is effective for the medical problem and available to the population being screened.<sup>1</sup> It is important to identify children with developmental problems as early as possible because some of these conditions are responsive to specific therapy. Family counseling, appropriate educational placement, and medical management to prevent secondary complications are important for those problems that are not responsive to treatment. Optimally, every child should be screened in a standardized way for developmental problems several times in their pre-school years, and the adequacy of their home environment should likewise be assessed periodically. A more practical approach is described in this paper, because this optimal approach is usually not practical in a

state such as Arkansas where the ratio of children to medical providers is so great.

### SCREENING THE CHILD

Typically, primary care physicians screen children for problems in development by a clinical impression generated from observation and medical history.<sup>2</sup> This is probably an inaccurate method for most physicians because they receive minimal training in this area and they see small numbers of such children.<sup>3</sup> Standardized developmental screening tests have been developed to be utilized at two levels: with questionnaires completed by parents or health aides; and with objective screening tests performed by health aides or professionals. These instruments attempt to objectify and standardize the screening approach so that as many children as possible who suffer from developmental problems will be identified while avoiding the false labeling of those who are normal.

*Screening Questionnaires.* The Rapid Developmental Screening Checklist (RDSC) consists of 40 items covering the age one month to five years which the parents answer "yes" and "no." This instrument is simple and straightforward, but the physician is given no clear indication as to what to do with the "no" answers.<sup>4</sup> The Denver Pre-Screening Developmental Questionnaire (PDQ) consists of 97 questions which cover an age range of three months to six years. The parent completes only 10 age-appropriate questions. If a child has six or fewer passes, it is recommended that a more complete developmental assessment be performed. This instrument has been used on large numbers of infants in research and has been found to be an adequately sensitive clinical tool.<sup>5</sup> A similar developmental questionnaire has been developed from the Gesell developmental schedules.<sup>6</sup> Although this instrument seems to yield somewhat lower false-positive and false-negative results, its administration is more complex and thus loses some of its screening utility.

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*Observation Screening Test.* The simplest and best standardized and validated screening test available to the primary care physician is the Denver Developmental Screening Test (DDST). This test is designed to be performed by trained lay personnel as well as by health providers, and requires 15 to 20 minutes to administer to the child from birth to six years of age. Usually less than a quarter of the test items are administered to an individual child, depending on the age. The DDST can be used to assess children from all social and racial backgrounds. The test yields results entitled Normal, Questionable, and Abnormal.<sup>7</sup> Several validation studies have found a sensitivity of 68 to 92% (the percent of abnormal children who were so identified) and a specificity of 92 to 97% (the number of normal children who were so identified). The Developmental Screening Inventory (DSI) is an objective screening instrument which is based on the Gesell Developmental Schedules which has not been as well validated and standardized as the DDST. (More detailed information on the above screening tests can be found in reference number 1).

*Suggested Screening Schedule.* Recognizing the deficiency of time that primary care physicians encounter, the following schedule is recommended for developmental screening. First, children who do not fall into a high risk category (medical or social) as described in the first article of this series can be assessed adequately by a questionnaire like the PDQ. This simple procedure should be performed at the ages of three to six months, nine to twelve months, 18 to 24 months, and yearly thereafter. Children who are at risk for medical reasons (i.e. who suffer a significant transient medical event like prematurity hypoxia, etc., as a neonate or young infant) or for social reasons (i.e. stressed environment with low education, income, etc.) should be assessed more closely. A developmental questionnaire like the PDQ should be utilized at every well child visit and a standardized objective screening test like the DDST should be performed at nine to 12 months, at 18 to 24 months, and yearly thereafter

(see Figure 1). Two important points should be recalled. First, these screening tests require little time, usually less than 15 to 20 minutes. Second, direct physician time is not required.

#### MEASURING THE HOME ENVIRONMENT

The recognition of the strong link between environment and children's development has prompted numerous primary care clinicians to employ an environmental assessment measure as part of their clinical evaluations. As alluded to earlier, the use of gross structural or status measures of family environments are not particularly useful clinically, for a variety of reasons. Families at every income and educational level differ widely. Perhaps most importantly, knowledge of the parents' education or the amount of crowding in the home does not provide the primary care clinician the kind of information useful for offering advice to the family. By comparison, the components of a child's environment which are the strongest correlates of his development are the quality and richness of the inanimate physical environment, and the responsivity and appropriateness of the social, interpersonal environment.<sup>8</sup> Several different types of measures are available for assessing a child's environment: (1) home visits, (2) structured interviews and questionnaires filled out by parents, (3) rating scales or behavioral observation based on the physician's observation of mother-child interaction at the time of the clinic visit.

*Home visits.* The most commonly used environmental measure is the Home Observation for Measurement of the Environment (HOME) Inventory. Here are two versions of the Home Inventory: one for infants (birth to age three) and one for preschoolers (age three to age six). The instrument designed for assessing the home of infants contains 45 items clustered into six subscales: (1) Emotional and Verbal Responsivity of Mother, (2) Avoidance of Restriction and Punishment, (3) Organization of the Physical and Temporal Environment, (4) Provision of Appropriate Play Materials, (5) Maternal Involvement with Child, and (6) Opportunities and

FIGURE 1.  
RECOMMENDED DEVELOPMENTAL SCREENING SCHEDULE

Risk Classification		Age		
		9-12 months	18-24 months	yearly
No risk	PDQ @ 3-6 months	PDQ	PDQ	PDQ
High risk: Medical or social	PDQ @ each visit	DDST	DDST	DDST

**Variety in Daily Stimulation.** The version of the inventory designed for assessing homes of preschoolers has 55 items comprising eight subscales: (1) Stimulation through Toys, Games and Reading Materials, (2) Language Stimulation, (3) Physical Environment, (4) Pride, Affection and Warmth, (5) Stimulation of Academic Behavior, (6) Modeling and Encouragement of Social Maturity, (7) Variety of Stimulation, and (8) Physical Punishment.

Information needed to score items on the inventory are obtained through a combination of observation and interview. It is administered in the child's home with information supplied by the child's primary caregiver. Administration takes approximately one hour. It requires that the child be present and awake. To facilitate ease of scoring, a "Yes — No" format is used. This instrument has recently been reviewed in detail.<sup>9</sup>

Although a number of other instruments have been developed for use during a home visit, such as the Social and Inanimate Environment Scale<sup>10</sup> and the Purdue Home Stimulation Inventory,<sup>11</sup> most of these other scales were primarily designed for research purposes and are more difficult to adapt to clinical use. The major advantage of these instruments during a home visit is their richness and naturalness. Visiting a home provides a vivid portrait of the conditions in which a child is developing. Moreover, the impressions gathered about the child's environment are not limited to those that are recorded on the observation form. The obvious major limitation of the home visit is that it is time consuming and often too costly in terms of personnel use. Nonetheless, selected use of home visits is useful, particularly in clinics where there is a substantial high risk clientele.

*Questionnaires and office interviews.* A more efficient means of assessing a child's environment is through the use of questionnaires or structured interviews done in the office. The Home Screening Questionnaire (HSQ) is such an instrument. The HSQ is completed by the mother or other main caregiver at the time of the clinic visit.<sup>12</sup> Working with 73 mothers of low-income Denver families, a correlation of .71 was observed between the scores on the HSQ and scores on the HOME Inventory. Furthermore, the HSQ correctly identified 84% of those families with a sufficiently low score on the HOME to warrant some suspicion of the need for environmental intervention. Office

questionnaires for assessing home adequacy like the HSQ can be extremely useful in the task of environmental screening.

Although questionnaires like the HSQ can provide valid and relatively comprehensive information about a child's environment, they frequently lack the richness of direct observational measures because interactions between parent and child are not indexed. Also, there is more opportunity for parents to provide inaccurate information, whether as a result of their ignorance of events or their wish to conceal events that they consider socially unacceptable.

*Rating scales and behavioral observation.* One means of indexing natural transactions between parent and child that does not involve a visit to the home is by systematically observing parent and child while they are at the clinic. Medical office encounters provide an excellent opportunity to sample the quality of mother-child interaction. For example, the primary care clinician often notes whether a mother talked to the child during the exam, whether the mother responded to the child's vocalizations, whether the mother comforted the child if upset, whether the mother smiled or praised the child, whether the mother expressed annoyance or hit the child, whether the mother hugged or kissed the child, etc. A checklist of such interactive behaviors could be developed and employed by the examining physician.\*

Similarly, ratings of the mother-child interaction can be made in specially designed situations at the office or clinic. Such rating instruments were developed by Ainsworth's group in their studies of infant-mother attachment. Some of the clinically useful scales are entitled Sensitivity-Insensitivity, Cooperation-Interference, Accessibility-Ignoring, Visual Contact, Vocal Contact, and Appropriateness of Play. Each scale has nine point dimensions with nine as the best score.<sup>13</sup> Although ratings based on observations of mother-child interaction during a medical evaluation can provide data about critical environmental transactions, such rating scales possess two limitations. First, they tend to be limited in scope. No information is obtained about the child's inanimate or his social environment outside of relations with mother. Second, behavior observed in a clinic may not always represent the

\*Such a scale has been developed by Casey, Whitt, and Schaefer and is available upon request from the first author.



typical behavior occurring in the home.

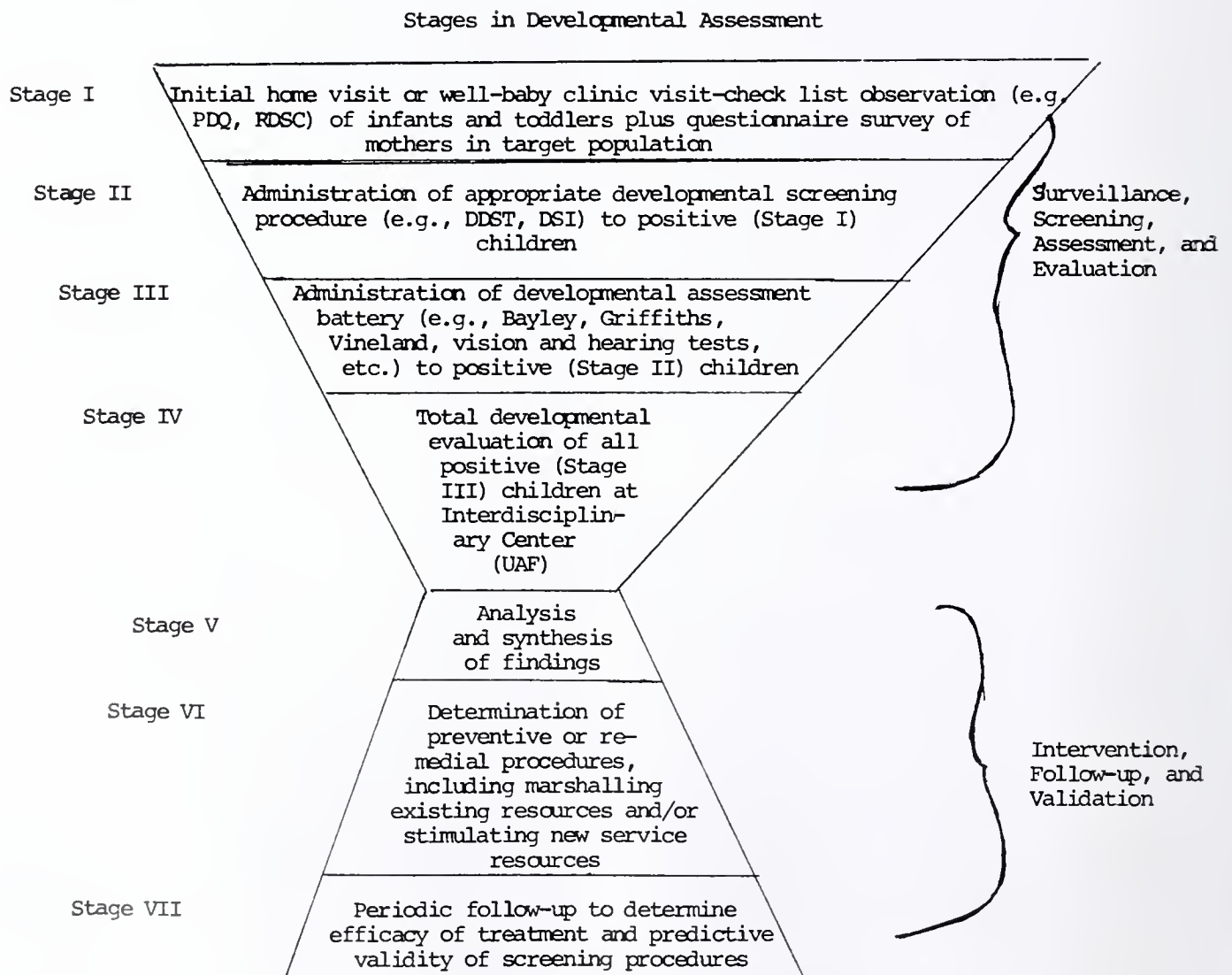
*Suggested Screening Schedule.* The instruments available to the primary care physician for screening the child's social and inanimate environment, and the research required to verify their utility, are not yet adequately developed to provide routine recommendations for screening. However, depending on the nature of the office practice and the patients served, some of the instruments discussed may be of utmost clinical utility to the individual clinician.

### IDENTIFIED PROBLEMS

*Problem in the child.* Screening children for developmental problems is only useful if the primary care physician has a practical approach available for further evaluation. Because the instruments described in this paper are *screening* instruments and not *diagnostic* techniques, further diagnostic procedures will be required. As a minimum, complete medical and social histories are required as well as complete physical and

neurologic examinations. The physical should usually include tests for vision and hearing. Further diagnostic developmental and/or psychological evaluations are usually required to avoid mislabeling and over-diagnosis, and to assist in developing a management plan. Figure 2 provides an optimal staged approach to screening for childhood developmental problems as adapted from a research model.<sup>14</sup> In Arkansas primary care health providers typically perform stages I and II. Stage III can be obtained from private psychologists, local mental health centers, or school districts, depending on the community. A Stage IV evaluation has been historically difficult to obtain in Arkansas. A new interdisciplinary center is in its infancy stage of development at Arkansas Children's Hospital in Little Rock. The Arkansas Children's Developmental Center utilizes a team approach consisting of general pediatrics, audiology, clinical psychology, speech pathology, and social work in assessing children

Figure 2



referred with developmental problems. The responsibility for Stage VI lies with the local health provider, i.e. determining the appropriateness of local services, and attempting to stimulate new services where there is a deficiency.

*Problem in the Environment.* Information regarding the environment derived either from a home visit, a clinic observation, or an office interview can serve as a basis for counseling parents about experiences likely to be beneficial to the development of young children. A physician can help parents realize the importance of toys for the development of a child and can help them analyze the function of different kinds of toys (e.g. gross motor coordination, fine motor and eye-hand coordination, contact comfort and emotional security, stimulation of exploration and creativity, etc.). Similarly, the physician can help parents realize the teaching potential of simple everyday experiences like a trip to the grocery store or a walk around the block.

The iatrogenic effect of a simple question from a respected physician should not be minimized. A mother may be puzzled or even resentful if someone she doesn't know, or whose role she does not understand, asks her if she ever takes her baby with her when she goes to the grocery store. But if her physician asks her the same question, the reaction is more likely to be, "Oh, do you think I should?" A brief scanning of the items contained in the HOME Inventory provides many valuable cues as to ways in which physicians can find out more about the environments in which their patients are developing. These can also provide a natural entree to an effective dialogue with the parents which is likely to result in the transfer of information and values which will foster the favorable development of the child. For those children at environmental risk whose parents are not likely to alter the environment, referral to an intervention oriented early childhood day care center would be helpful.

## CONCLUSION

This series of two papers provides the rationale and methods for developmental screening of children and their environments. Primary care health providers are encouraged to utilize the structured and standardized procedures described herein. These procedures require little time and they can be reliably performed by non-professionals under the supervision of a responsible health provider. Two precautions need to be emphasized. First, caution should be used in interpreting the results

of these tests. Screeners should not overinterpret and use diagnostic labels on the basis of these screening instruments. There is a certain percent of false positives in all screening tests. Second, children identified as abnormal on these screening tests require further diagnostic testing. A plan for diagnostic evaluation should be developed prior to instituting developmental screening. It is doubtful that such screening should be undertaken in a community if no diagnostic process is available.

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## EDITORIAL

# Cancer & Submolecular Biology

Alfred Kahn, Jr., M.D.

Ciba has published another fine symposium. This one is entitled "Submolecular Biology and Cancer." The practicing physician is likely to be thoroughly intimidated by the title — but there are several chapters of extreme interest: Albert Szent-Gyorgyi presented a paper concerning the living state and cancer in which he discusses some of the general chemical background of living matter.

Of much more practical interest is a presentation "A Note on Cancer and Possible Relationships to Submolecular Biology," by S. Reslova-Vasilukova and R. J. P. Williams. First of all the authors list 13 characteristics of cancer, which are as follows: "Extremely widespread among species. All types of cells of one organism are susceptible, not generally infectious or contagious. Susceptibility to disease may be inherited. No known cure except death of the affected cells sustained, not necessarily rapid growth rate of aberrant cells. Tumors do not have a growth form or shape. Chromosome damage in some cases, abnormal enzyme patterns and isoenzyme compositions. Unusual antigenic character associated with wide variety of chemicals in the environment. Associated with some viruses, cancer cells are autonomous and may be transplantable."

This is an interesting but in no way surprising list. The authors point out by this list and discussion that cancer is different from other diseases. One type of disease is due to a lower organism invading a higher organism, this does not fit cancer. Cancer does not arise from the mutation of germ cells, in the sense of providing a general origin. Chemical poisoning ordinarily does not lead to cancer — injury but increased production of cells; some chemicals may cause cancer through unknown steps. Reslova-Vasilukova and Williams feel that although viruses are

intracellular there is no general association between viruses and cancer — the general rule is infection. Lastly, they state that autoimmune disease may relate to cancer but the connecting bridges are unclear.

Reslova-Vasilukova and Williams summarize one dilemma of cancer by stating that "We do not know what cancer is in any precise molecular scientific terms."

One distinguishing characteristic of cancer is the ability of the abnormals to have unrestricted growth. Growth implies cell multiplication and when this occurs, there is always the possibility of some inherent error which may lead to unbridled cell multiplication — i.e. cancer. In the developing animal, growth and development is step wise or in stages; some control must be exerted at the terminus of each stage or the organism would be a weird hodge podge of cells. Different cell types have controls which exert their influence during growth and development — and also later in life to prevent unnecessary growth. Cancer might well be characterized as the loss of such control.

The authors describe how cancer is seemingly a mutation from normal cells — a genetic change. This might occur from the cell incorporating DNA of viral origin, altered DNA from chemicals, etc. The DNA could be injured at many sites and the different sites could cause different expressions in daughter cells. The environment around the cell may play a role in helping initiate a cancerous change. It is even postulated that tumors might be initiated after damage to RNA or some control protein which via a feedback might alter cell growth.

Protective devices are present to protect cells, they state, as extreme shells, pigmented layers, intracellular enzymes, organelles in the cells, for oxidative and hydrolytic attack. Reslova-Vasilu-

kova speculates that these very protective measures might themselves induce cell damage which would lead to cancer.

Tumor growth is said to be autonomous and thus tumors do not have distinctive shape like organs. It is not possible to state if this autonomy resides in a change in the inner cell or the membrane but something prevents the normal controls from communicating information to guide and stop cell growth. Aside from killing cancer cells, another mode of therapy would be to have the cancer re-establish communication with other cells possibly by a chemical messenger.

Of importance to physicians is the authors' discussion of the matter of disposition to cancer. They feel that the formation of cancer cells may relate to hormone levels, strength of the immune system, strength of the DNA repair apparatus, and

general resistance of the cell to change — the ability to follow regulation. These are factors which are transmitted genetically. Age and stage of life tend to modify these factors. External influences in the environment may damage a cell and thus leave it more readily convertible from normal to cancer by some internal factor. The big problem which research scientists are now wrestling with is what are the submolecular states that alter the cell into a cancer cell. The explanation put forth here is that "certain chemicals which themselves would alter the amounts of conducting proteins, and therefore of communication between proteins, in a cell." This has in turn led scientists to study free radicals which are charge carriers — three donor substrates under intense study in this regard are oxygen, methylglyoxal, and ascorbic acid.



## "From Other Years"

*Arkansas Medical Monthly*

Vol. 1 No. 9 December, 1880 pp. 419-420

### "THE WATERS OF THE HOT SPRINGS WILL KILL CONSUMPTIVES."

The language above quoted we find in one of the Hot Springs papers of a recent date. The communication in which it occurs is from the pen of Dr. George W. Lawrence, one of the most widely-known and accomplished physicians of this health resort. During twenty years' residence there, Dr. Lawrence's large practice has afforded him ample material for studying the therapeutic properties of these thermal waters, and he states that he has from time to time published to the medical world the fact, in unmistakable language, that the waters of the Hot Springs will kill consumptives. He quaintly declares that, having no interest in any cemetery or undertaker's establishment, he does not wish people to come there to die.

Of the correctness of Dr. Lawrence's observations concerning consumption there can be little doubt. A damp valley can not be otherwise than harmful to patients with phthisis.

Dr. Lawrence declares that these waters are the most valuable adjuncts in the treatment of chronic diseases of the blood, the skin, and the nervous system, and also in uterine and catarrhal

affections, and in "true scrofulosis."

Such testimony as this is not to be lightly considered, and we have no mind to dispute its correctness; but, at the same time, that in the Hot Springs waters there is any remedial power beyond its heat we totally disbelieve. As Keyes says, in his excellent work on venereal diseases, the water is exceedingly poor in mineral ingredients, while its alleged magnetic qualities are imponderable. In certain cachectic conditions — whether rheumatic gouty, scrofulous, malarial, syphilitic or alcoholic — where all remedies have failed at home, a sojourn at Hot Springs not infrequently does much good, provided the patient fall into the hands of a wise physician and a good cook; but the waters alone will cure none of these affections. Any other tolerably pure hot water would do as well were it equally well backed.

No scientific physician, we believe, claims now that this water has any specific power, and far less that it is a panacea, as charlatans pretend and the populace believe. . . . For every known and imagined physical ill people flock thither; the old in search of youth, the young in search of perfect health, the impotent for virility, the barren for babies, the rotten for renovation. In a word, these springs are, in popular belief, the vast, the all-



comprehensive, resistless and infallible extinguisher of human maladies. Hence this Arkansas village is a delightful place for doctors, and probably no town in the world is so abundantly supplied with these useful and amiable philanthropists, who are ever ready to go where they can do the most good.

Ah, and what a fountain of happiness and health it surely is, if the cackle which comes to us from the little burg be true; for, as rumor hath it, all the doctors who go there grow rich and all their patients come away cured!

Louisville Medical News.



## MEDICINE IN THE NEWS



### THE MONTH IN WASHINGTON

The American Medical Association has urged the Democratic Party Platform Committee to direct more federal effort toward the support of the private sector in order to strengthen the quality and accessibility of medical care for all Americans.

Testifying before the platform committee in Washington, AMA Chairman Lowell Steen, M.D., said the private sector is best equipped to take the lead in these activities with the role of the government limited to a supportive one.

The platform should include a strong statement urging the elimination of unnecessary federal regulation in medicine, Dr. Steen said.

Noting that the medical profession is not opposed to all regulation, the AMA official said that any regulation attempting to dictate physician medical judgment and practice must be avoided. Any interference with the physician-patient relationship and the confidentiality of this relationship should be opposed, Dr. Steen said.

The AMA recommended that the platform call for reforms in the regulatory process and that federal agencies be more publicly accountable for their activities.

A key proposal was that the platform call for increased efforts to improve the nation's health status. "Included should be continued support for medical manpower and health care facility development, with increased research in the basic medical sciences. Special efforts should be concentrated in areas of health education for all individuals."

The Democratic Committee was asked to recognize the Voluntary Effort (VE) initiated by various private sector parties as the most effective and appropriate means of meeting hospital cost issues. "It has succeeded in holding down the rate of increase," said Dr. Steen.

"The AMA has also called on individual physicians to hold down fee increases, and the success of this effort is evident from the fact that the physician fee component of the Consumer Price Index during the past year was significantly below the 'All Items' element. We urge the Democratic Party to include in its platform support for the VE as the best means of controlling the health care inflation."

The platform should emphasize support to private sector efforts to improve health insurance coverage and protection, especially against catastrophic illness, said Dr. Steen. Improvements also should be sought in Medicare and Medicaid to assure mainstream medical care, he added.

The overwhelming majority of the population has coverage for medical services, but there are still gaps in coverage, Dr. Steen said. "However, those problems do not necessitate a radical restructuring of the health care delivery system, such as is proposed by the President or by Senator Kennedy in their National Health Insurance plans."

The AMA Chairman said, "We reject the notion that, to meet the challenges of tomorrow, we must scrap the success of yesterday and today. Private health insurance has been a successful

vehicle to opening the access to medical care for the vast majority of our population. We believe that the private sector can, in cooperation with the federal government where necessary, close the remaining gaps in insurance coverage."

Dr. Steen said the Democrats should include in their platform a call on the federal government "to keep its promise to the elderly and the poor — that Medicare and Medicaid eliminate, not perpetuate, financial barriers to mainstream medical care."

In concluding, Dr. Steen said, "We believe the challenges of the '80s are to maintain and improve the quality of medical care and to ensure continued access to that care for all citizens."

\* \* \* \* \*

A middle ground treatment of people found guilty of simple possession of marijuana has been urged by the AMA.

A substantial reduction in penalties might be interpreted (particularly by young people) as societal approval of marijuana use, the AMA told the Senate Judiciary Committee, but the maintaining of existing criminal penalties may be too extreme.

"We believe that a middle ground between the stiff penalties permitted under the current law and those proposed in S. 1722 (a bill before the Committee) would be more appropriate," wrote James H. Sammons, M.D., AMA executive vice president. "We are particularly concerned by the stigma that any period of imprisonment or a felony conviction attaches to a young person's record, and the lifelong barriers to many avenues of employment and other future development that may result from sporadic use of marijuana or even a moment of youthful misdirection."

Dr. Sammons said severe penalties should be kept for those who traffic in the illicit marketing of controlled substances, including marijuana.

\* \* \* \* \*

Nine national organizations in the health field, including the AMA, expressed concern to Congress about a proposal to make chiropractic education eligible for federal aid.

The proposal has been advanced by Sen. Harrison Williams (D-NJ), Chairman of the Senate Labor and Human Resources Committee, as part of the overall health professions assistance package.

The eight additional organizations are: the American Association of Dental Schools, the As-

sociation of American Medical Colleges, the American Association of Colleges of Pharmacy, the American Association of Colleges of Osteopathic Medicine, the American Dental Association, the American Pharmaceutical Association, the Association of American Veterinary Medical Colleges and the American Veterinary Medical Association.

In a letter to Committee members, Sens. Edward Kennedy (D-MA), and Richard Schweiker (R-PA), the organizations said:

"We are concerned over, among other things, the timing of this development and the impact it may have on the existing programs under Titles VII and VIII of the Public Health Service Act. That is, at a time when all segments of health manpower are being asked to accept across-the-board cutbacks . . . it would seem a little inconsistent to simultaneously expand the base of eligibility and participation.

" . . . it further troubles us that a proposal to establish entitlement for a new health provider group such as chiropractic would come without any of the normal legislative deliberations to which the Committee has customarily adhered. Indeed, without any recommendations from the Administration, any public hearings, and in general any of the close scrutiny which each of our professions has undergone before being covered under the Act, a very significant and major dilution of the program has been announced in this instance as almost a consensus modification.

" . . . if there is now an appropriate place for chiropractic or any other discipline within the Health Professions Education and Distribution Act of 1980, there should be no difficulty in substantiating it through a full and complete evaluation."

\* \* \* \* \*

The Carter Administration has taken a quick step backwards in its proposed directive to limit federal support for hospital construction. In the space of a day, White House officials withdrew from the proposal a provision that state and local health planning agencies would review and comment on proposed federal hospitals.

American Hospital Association President J. A. McMahon said that the change of mind makes the entire program "all the more political. They pulled back the only thing in the proposal that made any sense."



McMahon speculated that pressure from veterans' groups was responsible for the White House reversal. "They (the White House) didn't want to take on the veterans in an election year," McMahon said.

An American Legion spokesman confirmed that a strong protest was lodged at the White House against inclusion of Veterans' Administration facilities in the health planning process.

Later in the month, however, the White House Office of Management and Budget (OMB) published in the *Federal Register* a proposed memorandum that would establish policies and procedures under the Carter plan to limit federal support for hospital construction in overbedded areas. The OMB document includes background data, definitions, and outlines of the policies and implementation procedures for hospitals.

\* \* \* \* \*

Insisting there were no political strings attached, the Administration has signed an agreement with New York State and New York City providing federal funds to keep open two Harlem hospitals slated for shutdown.

Under the agreement the federal government will spend \$7.7 million to establish a Health Maintenance Organization at Metropolitan Hospital. The city and state together will contribute a similar amount.

In addition, the federal government will provide an unspecified amount to establish a specialized alcohol, drug abuse and mental illness program at Sydenham Hospital.

Both hospitals had been slated for closing by the city. They will remain open with the new federal programs.

"Metropolitan Hospital will become 'family doctor' to the people of the community," Patricia Harris, Secretary of the Health and Human Services (HHS) Department, said. "If this demonstration is successful, at the end of five years we will have a model delivery system which can be used by other inner city areas with similar problems."

The city plans to enroll at least 17,000 city workers and others with health insurance in the program, giving it a stable base.

Mrs. Harris insisted there were no political strings to the agreement. "This is not, as some have said, an attempt to buy votes," Mrs. Harris said. "The votes of the people of New York are not for sale."

Confronted by the first of a series of hospital

closings in New York City last year, Mrs. Harris took a tough stand, insisting it wasn't federal government's responsibility to bail out failing hospitals. Ironically, New York State has a tightly regulated hospital system which federal planners often cite approvingly for keeping a lid on rate increases.

The agreement was signed at an elaborate White House ceremony featuring Mrs. Harris, Vice President Walter Mondale, New York Mayor Edward Koch and lawmakers from the state.

\* \* \* \* \*

The troublesome ethical and economic problem of providing heart transplants as a Medicare benefit will be weighed by a special study at the HHS Department.

Meantime, the Agency is halting the benefit which had been granted on an ad hoc basis for Medicare patients receiving transplants at the Stanford University Medical Center which performs about 25 transplants annually.

Medicare has financed a total of 23 transplants over the years. Heart transplantation has been developed at Stanford under Norman Shumway, M.D., into a procedure that has shown promise of greatly extending life.

HHS Secretary Patricia Harris told a news conference that "it is the promise of the extended life this new technique offers those facing death, along with the prospect of its increased use in future years, that makes the Department's policy decision in this area a matter of critical interest to the American public."

There are too many unanswered questions to justify a final decision on general Medicare coverage, Harris said. These include the patient selection process, the long-term social, economic and ethical consequences of the procedure, and the potential for national expansion of the heart transplantation procedure.

New medical techniques and technologies "demand that we develop a rational process that makes it possible to define what constitutes 'reasonable and necessary' medical services which can be funded by Medicare in the case of heart transplants and other procedures," she said.

The Department's two-year study will be conducted by the Health Care Financing Administration in cooperation with the Public Health Service's National Center for Health Care Technology.

\* \* \* \* \*

Despite the insistence of the Food and Drug

Administration that there is no lag time in the approval for new drugs, the U. S. General Accounting Office has declared the drug lag official.

In a recent report entitled "FDA Drug Approval — A Lengthy Process That Delays the Availability of Important New Drugs," the GAO said that for some important drugs (those providing a major or modest gain over any other marketed drugs), the approval process delays the availability of the therapeutic benefits a drug may provide to the public."

The report found that during one particular period — July, 1975 to February, 1978 — the FDA approved 14 significant new drugs, 13 of which had already been approved abroad. Norway, Canada and Switzerland approve new drugs on an average of one-half the U. S. approval time, while England averages one-fifth the U. S. approval time.

The GAO Report did not reserve all its criticism for the FDA. Industry must also share the blame for a slow approval process. The report charged that drug companies submit incomplete new drug applications and are slow to resolve deficiencies. The FDA is responsible for other major delay factors including:

- scientific and professional disagreement between FDA and industry.
- imprecise FDA guidelines, subject to varying interpretations.
- slow or inadequate FDA feedback to industry and lack of promptness in notifying drug firms of deficiencies in applications.
- limited time spent reviewing an uneven workload.
- lengthy chemistry and manufacturing control reviews.

"Other (delay) factors include intense congressional and consumer scrutiny of the drug approval process, adversary relationships between FDA and the drug industry, and FDA's conservative approach to drug regulation," said the GAO Report.

\* \* \* \* \*

The HHS Department is sending a catalogue of comparative price information on 184 prescription drugs to all physicians and pharmacists.

The catalogue divides 184 of the most frequently prescribed drugs plus aspirin and acetaminophen into 16 therapeutic categories such as analgesics and anti-infectives.

Under each category, the guide lists the generic and trade names for each drug, the marketer of

the products, and the cost to the pharmacist of an amount equal to one day of therapy of each drug. Bar graphs show the daily therapy cost of each drug relative to other brands of the same drug.

The guide is intended to help physicians and pharmacists consider the cost of different drugs when they write or dispense prescriptions, HHS said.

HHS said about half of the drugs commonly prescribed in the U. S. are available from multiple sources — by both brand and generic names — and at widely varying prices.

Current statistics show that only 12 percent of written prescriptions specify the generic names of a drug.

Pharmacists are allowed in 35 states to dispense lower priced generic drugs in place of brand name products without the consent of the physician unless the physician indicates that the patient needs the higher priced brand.

\* \* \* \* \*

Howard Newman, president of the Dartmouth-Hitchcock Medical Center, Hanover, N.H., has been appointed Administrator of the Health Care Financing Administration (HCFA). Newman, 45, succeeds Leonard Schaeffer, who resigned. HCFA runs the Medicare and Medicaid programs in the HHS Department.

In the early 1970s Newman was Commissioner of the Medical Services Administration which operated the Medicaid program.

\* \* \* \* \*

## NEW CODE OF ETHICS

At the July 1980 meeting of the American Medical Association, the House of Delegates of AMA adopted new Principles of Medical Ethics as follows:

### AMA PRINCIPLES OF MEDICAL ETHICS

Preamble: The medical profession has long subscribed to a body of ethical statements developed primarily for the benefit of the patient. As a member of this profession, a physician must recognize responsibility not only to patients, but also to society, to other health professionals, and to self. The following Principles adopted by the American Medical Association are not laws, but standards of conduct which define the essentials of honorable behavior for the physician.

1. A physician shall be dedicated to providing competent medical service with compassion and respect for human dignity.



- II. A physician shall deal honestly with patients and colleagues, and strive to expose those physicians deficient in character or competence, or who engage in fraud or deception.
- III. A physician shall respect the law and also recognize a responsibility to seek changes in those requirements which are contrary to the best interests of the patient.
- IV. A physician shall respect the rights of patients, of colleagues, and of health professionals, and shall safeguard patient confidences within the constraints of the law.
- V. A physician shall continue to study, apply and advance scientific knowledge, make relevant information available to patients, colleagues, and the public, obtain consultation, and use the talents of other health professionals when indicated.
- VI. A physician shall, in the provision of appropriate patient care, except in emergencies, be free to choose whom to serve, with whom to associate, and the environment in which to provide medical services.
- VII. A physician shall recognize a responsibility to participate in activities contributing to an improved community.

\* \* \* \*

#### MINUTES OF MEETING OF THE COUNCIL OF THE ARKANSAS MEDICAL SOCIETY

The Council of the Arkansas Medical Society met at 12:00 noon on Sunday, June 29, 1980, in the Plaza West Room of the Camelot Inn, Little Rock. Present were Burge, Kutait, Smith, Shuffield, Duzan, Martin, Osborne, Crow, Gray, Hestir, P. Bell, Irwin, Warren, Sanders, Harris, McCrary, Jouett, Henry, Williams, Wilkins, Lilly, Andrews, Chudy, Phillips, Watson, Wynne, Kolb, Robert Benafield, James, Weber, Thomas Bruce, James Kolb, Mr. John Greer of Blue Cross-Blue Shield, Mrs. Warren Boop, Mr. Cearley, Mr. LaMastus, Miss Richmond, and C. C. Long.

The Council transacted business as follows:

- 1. Heard Mr. Greer report on the results of a poll of participants in the Society group plan regarding extension of enrollment to employees of physicians and their families. He reported that 11% of the participants responded; he did not feel that the response indicated a desire by the majority of the participants to include employees and their families. Upon motion of Wilkins, the Council voted to include employees and their families

in the Society group plan inasmuch as the respondents did indicate a desire to do so.

- 2. Dr. Henry presented suggestions from the Washington County Medical Society regarding changes in the Annual Session scheduling to increase interest and attendance. After discussion, the Council voted to change the meeting time for the annual session from Sunday through Wednesday to Thursday through Sunday as soon as feasible. The Council further voted to study changing of the meeting format with a report to be presented to the Council for approval.
- 3. The Council approved actions of the Executive Committee on May 28, 1980, by motion of Harris.
- 4. The Council voted, upon motion of Lilly, to establish the following policies regarding expense allowance for the president and president-elect of the Society and certain convention expense as follows:
  - (A) Complimentary tickets are to be furnished to all individuals seated on the dais at the convention inaugural banquet.
  - (B) Eight complimentary tickets for the inaugural banquet are to be made available to the incoming president for his guests attending his inauguration.
  - (C) The Society is to pay the hotel bill of both the president and president-elect at the annual meeting.
  - (D) Expenses be authorized for both the president and president-elect to attend the American Medical Association Leadership Conference each year.
  - (E) Expenses be authorized for both the president and president-elect to attend one of the two meetings of the American Medical Association House of Delegates each year.
  - (F) The Society will pay reasonable expenses of the president and president-elect in addition to the above-listed items. Upon motion of Henry the Council voted to make the authorization for the expenses retroactive to the 1980 Annual Session.  
(Fiscal Note: It is estimated that items authorized above will increase the Society expense budget for approximately \$5,000 per year.)

5. Upon motion of Williams and Kutait, the Council voted to ask the Budget Committee to make a recommendation to the Council regarding payment of mileage for Society members attending committee meetings. The consensus of the Council members present was that a mileage allowance should be allowed committee members as long as such payment could be made within the present dues structure.
6. The Council considered the vacancy on the Medical Services Review Committee for the Radiology position and, upon motion of Warren, selected Donald C. Riley of Russellville to fill the vacancy.
7. The Council considered the mileage allowance paid to members of the Council and voted to keep the payment at 15¢ per mile.
8. James Kolb of the Committee on National Legislation and James Weber reported for Society representatives making a trip to Washington to visit with the Arkansas Congressional delegation.
9. President Kutait discussed the officer retreat proposed in his inaugural address and recommended that the Council endorse the concept and appoint a committee to work out details. Upon motion of Warren, the Council requested that the chairman appoint an ad hoc committee of the Council to study the feasibility of a weekend retreat for officers and report back to the Council.
10. The Council made appointments to the Board of Trustees of the Society Pension Plan as follows:  
 Dr. T. E. Townsend — appointed to fill the unexpired term of Mr. Schaefer (term expires April 1983).  
 Dr. George F. Wynne — appointed to succeed Dr. Ben Saltzman (term expires April 1984).
11. Dr. Kutait reported for the Reorganizational Study Committee and submitted the following recommendation:  
 "That the Council favorably consider limitation of tenure of councilors to three two-year terms with two years off before being eligible for re-election. The committee further recommended that the mechanism for implementation be worked out by the Council and not referred back to the committee."  
 There was considerable discussion on limitation of tenure for councilors, with the majority against limitation. The Council then voted, by motion of Williams, to request that the Constitutional Revisions Committee draft amendments to the Constitution and Bylaws to provide that councilor districts would actually hold elections prior to the Annual Session of the State to elect the councilor for the councilor vacancy occurring at that annual session.

12. Dr. Kutait requested an expression of opinion from the Council on limitation of tenure for Society officers, since that issue is being considered by the reorganizational study committee. Upon motion of Lilly, the Council went on record as being generally opposed to limitation of tenure for its officers.
13. The Council received for information the Arkansas Department of Health's grant application for continuation of its Rural Health Development Office program.
14. James Weber, chairman of the Legislative Committee, reported to the Council that the State Medical Board had proposed regulations which would limit to two the number of registered nurse practitioners employed or supervised by a licensed physician. Upon motion of Kutait, the Council voted to write the State Legislative Council endorsing the concept of having only two nurse practitioners employed or supervised by a physician and providing a copy of an article from *Medical Economics* regarding a pediatrician's use of pediatric physician's assistants. The motion included directions to forward a copy of the letter to the Director of the State Health Department.

The meeting adjourned at 2:10 p.m.

APPROVED: John P. Burge, M.D.

Chairman

#### ANSWER—Electrocardiogram of the Month

**DISCUSSION:** Each lead shows both native and paced beats. The native beats are in RBBB configuration and the paced beats are in LBBB configuration. The first pacemaker artifact in a VR initiates no QRS complex. There are other examples of noncapture on the trace as well. The interval from the pacemaker spike initiating the first QRS complex in  $V_4$  to the native QRS in  $V_4$  exceeds by far the free running interval of the pacemaker, so the pacemaker was inhibited by some potential. This would be an example of a sensing problem with the pacemaker. So, all the statements are true except C. The patient ultimately required new epicardial leads.



# keeping up

## Category 1 Continuing Medical Education Programs Available in Arkansas

### **TWO DAYS OF INTERNAL MEDICINE**

Presented by George Ackerman, M.D., *October 17, 8:30 a.m. to 5:00 p.m.*, and *October 18, 8:30 a.m. to 3:30 p.m.*, Education I Auditorium, UAMSC. Eleven hours Category I credit. Registration fee: \$75 (\$50 for American College of Physicians members).

### **TENDON SURGERY FOR THE HAND AND FOREARM**

Presented by E. R. Weber, M.D., *October 24, 8:00 a.m. to 5:00 p.m.*, and *October 25, 8:00 a.m. to 1:00 p.m.*, Education II Building, UAMSC. Twelve hours Category I credit.

### **MANAGEMENT OF ACUTE RESPIRATORY PROBLEMS**

Presented by Jan D. Smith, M.D., University of Texas at San Antonio, and Frank James Wilson, Jr., M.D., University of Arkansas for Medical Sciences, *November 5, 3:30 p.m. to 8:00 p.m.*, Holiday Inn, I-30 at State Line, Texarkana. Four

hours Category I credit. Registration fee \$12 (dinner meeting). Sponsored by AHEC-Southwest Texarkana.

### **ENDOCRINE TREATMENT OF INFERTILITY/ ENDOCRINOLOGY OF SEXUAL BEHAVIOR**

Presented by Ewa Radwanska, M.D., "Endocrinology of Sexual Behavior," *November 7, 8:00 p.m.*; "Endocrine Treatment of Infertility," *November 8, 8:00 a.m. to 5:30 p.m.*, Camelot Inn, Little Rock. Hours of Category I credit: one hour November 7; eight hours November 8. Registration fee: \$75, \$20 for optional dinner on November 7. Sponsored by UAMS.

### **BEYOND THE BASICS: AN ADVANCED PROGRAM IN INFECTION CONTROL**

Presented by Terry Yamauchi, M.D., *November 20, 7:45 a.m. to 5:00 p.m.*, and *November 21, 8:00 a.m. to 4:00 p.m.*, Camelot Inn, Little Rock. Ten hours Category I credit. Registration fee: \$50. Sponsored by UAMS.

### **RECURRING EDUCATION PROGRAMS**

Unless otherwise indicated, programs are for one to one and one-half hours Category I credit.

#### **FAYETTEVILLE — AHEC-NW**

*Medical Teaching Conference*, each Saturday, 7:30 a.m., Washington Regional Medical Center.

#### **FAYETTEVILLE — VA MEDICAL CENTER**

*Radiology Conference*, October 2nd and 16th, and November 16th and 20th, 1:00 p.m., Conference Room.

*Pathology Conference*, October 21st and November 18th, 3:00 p.m., Conference Room.

*Mortality Conference*, October 9th and November 13th, 3:00 p.m., Conference Room.

#### **FORT SMITH — AHEC**

*Tumor Conference*, every Tuesday, 12:00 noon, Fourth Floor Conference Room, Sparks Regional Medical Center.

#### **JONESBORO — ST. BERNARD'S REGIONAL MEDICAL CENTER**

*Interesting Cases*, second and fourth Tuesday, 12:00 noon, Dietary Conference Room. Sponsored by AHEC-NE.

*Tumor Conference*, third Tuesday, 12:00 noon, Dietary Conference Room. Sponsored by AHEC-NE.

*Medical Lecture Series*, each Friday except third Friday, 11:50 a.m., Dietary Conference Room. Sponsored by AHEC-NE.

*Chest Conference*, third Friday, 11:50 a.m., Dietary Conference Room. Sponsored by AHEC-NE.

#### **LITTLE ROCK — BAPTIST MEDICAL CENTER**

*Pulmonary Care Conference*, each Tuesday, 12:00 noon to 1:00 p.m., Dining Room #4.

*Central Arkansas Primary Care Conference*, October 8th and November 11th, 7:00 p.m. to 9:00 p.m., Auditorium. Two hours Category I credit.

*Cardiopulmonary Resuscitation Course*, second Wednesday, 6:00 p.m. to midnight, Human Resource Development Area. Six hours Category I credit.

*Emergency Medicine Conference*, October 1, 15, 19, and November 12 and 26, 12:30 p.m. to 1:30 p.m., Conference Room #1.

*Morbidity and Mortality Conference*, first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.

*Surgery Conference*, each Thursday except first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.

As organizations accredited for continuing medical education by the Liaison Committee on Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.

**LITTLE ROCK — ST. VINCENT INFIRMARY**

*Interhospital GI Problems Conference*, first Monday, 6:00 p.m. to 7:30 p.m., Room E155, Education Wing.  
*Pediatric Conference*, first and third Monday, 12:30 p.m. to 1:30 p.m., Room E159, Education Wing.  
*Interhospital Urology Grand Rounds*, first Tuesday, 5:30 p.m. to 6:30 p.m., Room E159, Education Wing.  
*Peripheral Vascular Disease Conference*, third Tuesday, 6:00 p.m. to 7:00 p.m., Room E159, Education Wing.  
*Neuropathology Conference*, third Tuesday, 5:00 p.m. to 6:00 p.m., Room S1169, Laboratory.  
*Pulmonary Conference*, first and third Thursday, 12:00 noon to 1:00 p.m., Room E159, Education Wing.  
*Cardiology Conference*, second and fourth Thursday, 12:00 noon to 1:00 p.m., Room E159, Education Wing.

**LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES**

*Internal Medicine Grand Rounds*, each Tuesday, 8:00 a.m. to 9:00 a.m., Education I Auditorium.  
*Neuroradiology Conference*, each Wednesday, 4:00 p.m. to 5:00 p.m., Department of Radiology Conference Room.  
*Radiology Continuing Education Lecture Series*, two Wednesdays each month, 6:00 p.m. to 7:30 p.m., Department of Radiology Conference Room.  
*Categorical Course in Radiology* (beginning September 2nd), each weekday except Wednesday, 4:15 p.m. to 5:00 p.m.; Wednesday, 5:00 p.m. to 5:45 p.m., Department of Radiology Conference Room.

**PINE BLUFF — AHEC-SW**

*Medical Lecture Series*, fourth Tuesday each month, 6:30 p.m. to 9:00 p.m., dinner meeting at local restaurant.

**POCAHONTAS**

*Medical Lecture Series*, third Tuesday in October, 7:30 p.m., Randolph County Hospital. Sponsored by AHEC-NE.

**TEXARKANA — AHEC**

*Tumor Conference*, first Wednesday, 7:00 a.m. (breakfast), Classroom B, St. Michael Hospital, Texarkana.  
*Neuro-radiology Clinic*, second and fourth Wednesday, 7:00 a.m. (breakfast), Private Dining Room, Wadley Hospital, Texarkana.  
*Chest Conference*, third Wednesday, 12:30 p.m. (luncheon), Classroom B, St. Michael Hospital, Texarkana.



**P E R S O N A L   A N D   N E W S   I T E M S**

**HONORARY POSITION**

Dr. Milton C. John, Jr., was elected Chief of Staff Emeritus of the Stuttgart Memorial Hospital. Dr. John has served on the hospital staff since 1959.

Others elected at the meeting were Dr. Marolyn Speer as Chief of Staff, Dr. Noble Daniel as Vice Chief of Staff, and Dr. Mark Malloy as Secretary.

**PINE BLUFF PHYSICIAN**

Dr. Linda Haynie Green, a native of Pine Bluff, has recently opened an office at 1710 Doctors Drive for the practice of Internal Medicine.

**PHYSICIAN RECEIVES AWARD**

Dr. Edward P. Hammons of Forrest City recently received the Fourth Annual Arkansas Trauma Research Society Service Award. The award was given to Dr. Hammons for his contributions

to the State's emergency medical services. Dr. Hammons is the chairman of the Governor's Advisory Council Training Committee for EMT Education, state president of the Emergency Physicians Association, medical director of the paramedic program at East Arkansas Community College and medical director of the ambulance service at Forrest Memorial Hospital.

**DANVILLE GAINS PHYSICIAN**

Dr. J. R. Baskerville, formerly of Edmonton, Alberta, Canada, has joined the Harris-Edmondson Clinic in Danville. Dr. Baskerville's specialty is Family Medicine.

**DR. CROW HONORED**

Dr. and Mrs. Merl Crow of Warren were honored with an open house by Dr. and Mrs. W. C. Whaley and staff members of Crow-Whaley Clinic.



Dr. Merl Crow has retired from fulltime medical practice after forty years.

#### PHYSICIAN LOCATES

Dr. William Oh has located in Malvern. Dr. Oh's specialty is Orthopaedic Surgery.

#### SPECIALTY MEMBERSHIP

Dr. Carlton Chambers of Harrison has been elevated to associate membership in the American Academy of Facial Plastic Reconstructive Surgery. He had been a junior member of the Academy since 1973.

#### EMERGENCY ROOM COVERAGE

The Lawrence Memorial Hospital in Walnut Ridge has employed Dr. Kim Saito to provide emergency room care.

#### PARKIN PHYSICIAN

Dr. Doan Van-Bui has moved to Parkin from Gillette. Dr. Doan will practice in the Parkin Medical Clinic.

#### AAFP OFFICERS

Dr. Bruce Schratz, North Little Rock, was installed as president of the Arkansas Academy of Family Physicians during its annual meeting in Little Rock. Other officers of the Academy are: Dr. Jerry Mann of Arkadelphia, president-elect; Dr. Lee Parker of Fayetteville, vice president; and Dr. R. A. Etherington of Eureka Springs, secretary-treasurer.

#### PRE-MED ADVISOR

Information is being sought concerning Dr. Samuel Dellinger who was pre-med advisor and with the Department of Zoology at the University of Arkansas, Fayetteville, from 1921 to 1957. If you have any information or anecdotal material you wish to share, please contact: Nancy Glover McCartney, Curator of Zoology, University Museum, University of Arkansas, 338 Hotz Hall, Fayetteville, Arkansas 72701; phone 575-3555.

#### HOT SPRINGS GAINS PHYSICIANS

Dr. Balakrishna V. Pai has joined Dr. K. K. Jayaraman for the practice of Cardiology.

Dr. Michael E. Finan, an Obstetrician-Gynecologist, has joined Drs. Haynes G. Jackson, Sr., and Haynes G. Jackson, Jr.

Dr. Sheryl L. Davis has joined Drs. W. G. Klugh, Jr., and Robert P. Humphreys for the practice of Anesthesiology.

Dr. Rob McCrary has returned to Hot Springs for the practice of medicine. Dr. McCrary is a

Nephrologist. He is medical director of the dialysis unit at Ouachita Memorial Hospital.

#### WEST MEMPHIS SURGEON

Dr. Paul Huffstutter has joined Doctors Glenn P. Schoettle and H. G. Lanford at 308 South Rhodes in West Memphis. Dr. Huffstutter is a General and Vascular Surgeon.

#### AHEC RESIDENTS

The Pine Bluff AHEC has announced that the following physicians are now first-year residents at the clinic: Dr. James T. Meredith of Forrest City, Dr. John E. Alexander, Jr., of Magnolia, Dr. Steven F. Collier of Augustus, Dr. Jay D. Holland of Little Rock, Dr. Lester T. Alexander of McGehee, and Dr. Janet L. Titus of Muscatine, Louisiana.

#### DUMAS NATIVE

Dr. Thomas L. Lewellen, a native of Dumas, has returned to practice Family Medicine. Dr. Lewellen's office will be in the Southeast Arkansas Medical Center.

#### CONWAY GAINS PHYSICIAN

Dr. Paul McChristian has moved to Conway for the practice of Obstetrics and Gynecology. His office is at College Medical Park, 2519 College.

#### DELTA DOCTOR

Dr. Chu Iy Tan has opened his office for General Practice in Dermott. His office is in the Health Department Building.

#### PINE BLUFF PHYSICIAN

Dr. Richard Justiss has moved to Pine Bluff. His specialty is Family Practice.

#### PRAIRIE GROVE GAINS PHYSICIAN

Dr. John Adkins has begun practice in Prairie Grove. His office is located in the clinic formerly occupied by Dr. Jeff Baggett.

#### GOVERNOR'S PROCLAMATION

Governor Bill Clinton proclaimed the week of July 27 through August 2, 1980, as Family Physician Week. The annual meeting of the Arkansas Academy of Family Physicians was held that week. Governor Clinton presented a proclamation to the incoming president of the Academy, Dr. Bruce Schratz.

#### DR. QUAN

Dr. Joseph Quan, a General Practitioner, has joined the Prairie County Medical Center in Des Arc.



## **NEW MEMBERS**

### **DR. CHARLES H. DAY**

Dr. Charles Day is a new member of the Independence County Medical Society.

Dr. Day is a native of Decatur, Alabama, and attained a B.A. degree in 1942 at the University of Alabama. In 1944, his medical degree was granted by Tulane University School of Medicine in New Orleans. His internship was served at Shreveport Charity Hospital (now Confederate Hospital) and his residency was at Jefferson-Hillman Hospital in Birmingham (now University of Alabama).

Dr. Day served with the United States Navy from 1945 to 1946 and from 1952 to 1954. From 1954 to 1958, Dr. Day practiced in Lake Charles, Louisiana, and from 1958 to 1980, he had a practice in Tulsa, Oklahoma. In June of 1980, Dr. Day moved to Batesville.

Dr. Day is board certified in Urology. His office is at 17th and Harrison in Batesville.

### **DR. SYED M. Z. TAHIR**

Van Buren County Medical Society has recently added to its membership roll Dr. Syed Tahir, a native of Rampur, U.P., India. He attended Lucknow University, Lucknow, Uttar Pradesh, for his pre-medical education. In 1973 he was granted his M.D. by King George's Medical College at Lucknow University.

Dr. Tahir served his internship at Worcester City Hospital in Worcester, Massachusetts. His residency was at Sacred Heart Hospital in Norristown, Pennsylvania. He is a candidate member of the American College of Surgeons and a member of the American College of Emergency Physicians.

Dr. Tahir has located in Clinton for the practice of General Surgery.

The Pulaski County Medical Society has added eight members to its roll:

### **DR. SUSAN W. BAKER**

Dr. Susan Baker, born in Kansas City, Missouri, attended Hall High School in Little Rock. She

received a B.S. in Biology from the University of Arkansas at Little Rock in 1973. In 1977, Dr. Baker was graduated from the University of Arkansas College of Medicine.

Dr. Baker served an internship at the University of Arkansas College of Medicine. Her residency in Internal Medicine was served at the same institution from 1978 to 1980.

Dr. Baker's office for the practice of Internal Medicine is at 11215 Hermitage Road in Little Rock.

### **DR. THOMAS D. CAIN**

Dr. Thomas Cain was born in Hot Springs.

Dr. Cain attended Ouachita Baptist in Arkadelphia and the University of Arkansas at Fayetteville for his pre-med education. In 1975, he was granted his medical degree by the University of Arkansas College of Medicine.

Dr. Cain served his internship at the University of Arkansas College of Medicine and from 1976 to 1978 served Internal Medicine and Geriatrics residencies at the same institution.

Dr. Cain's specialty is Internal Medicine/Geriatrics. His office is located at 11215 Hermitage Road in Little Rock.

### **DR. GUY F. GARDNER**

Dr. Guy Gardner is a native of Russellville, Arkansas. He attended the University of Arkansas for his pre-med education and received a B.A. in 1972. In 1976, Dr. Gardner was granted a medical degree by the University of Arkansas College of Medicine.

Dr. Gardner served his internship at the University of Arkansas College of Medicine. From 1977 to 1980, he was a resident of Otolaryngology and Maxillofacial Surgery at the University of Arkansas Medical Center.

Dr. Gardner's office is at 330 Medical Towers Building, Little Rock.

### **DR. A. DAVID HALL**

Dr. David Hall, a graduate of Hall High in Little Rock, was born in Baltimore, Maryland.

Dr. Hall was graduated from Southwestern at Memphis in 1969 with a B.A. degree. In 1970, he received an M.S. from the University of Arkansas in Fayetteville. The University of Arkansas College of Medicine awarded Dr. Hall his medical degree in 1974.

Dr. Hall interned at Cincinnati General Hospital in Ohio. At the University of Cincinnati, he served a Surgical residency from 1975 to 1977 and a Urological residency from 1977 to 1980.

Dr. Hall's specialty is Urology. His office is located at 500 South University in Little Rock.



**DR. EDWARD C. LOEBL**

Born in Baltimore, Maryland, Dr. Edward LoebL received his pre-med education at Franklin and Marshall College in Lancaster, Pennsylvania.

In 1971, Dr. LoebL was graduated from the University of New Mexico School of Medicine in Albuquerque. His internship was served at Parkland Memorial Hospital in Dallas.

From 1973 to 1977, Dr. LoebL served a Surgery Residency at the University of Texas Southwestern Medical School in Dallas. From 1977 to 1979, he served a residency in Thoracic and Cardiovascular Surgery at the same institution. Dr. LoebL is board certified.

Dr. LoebL's specialty is Thoracic and Cardiovascular Surgery. He practices with Arkansas Cardiovascular Surgery Associates, P.A., at 200 Medical Towers Building in Little Rock.

**DR. CHARLES E. PHILLIPS**

Dr. Charles Phillips, a native of Little Rock, attended Bethany Nazarene College, Bethany, Oklahoma, for his pre-med education.

In 1975, Dr. Phillips was graduated from the University of Arkansas College of Medicine. He served an internship at the University of Arkansas Medical Center in Little Rock. Dr. Phillips was a resident in Neurology from 1976 to 1977 at the University. An Obstetrical-Gynecological residency with the Pensacola Educational Program in Florida was served from 1977 to 1980.

Dr. Phillips is a junior fellow of the American College of Obstetricians and Gynecologists. His office is in Suite 800 at 9600 West 12th in Little Rock.

**DR. A. JACKSON SOMERS**

Dr. Jack Somers, a native of Little Rock, is a graduate of Little Rock Central High School. His pre-med education was at Hendrix College in Conway. In 1977, he received his medical degree from the University of Arkansas College of Medicine.

Dr. Somers served his internship and Family Practice Residency at the University of Arkansas College of Medicine.

Dr. Somers' specialty is Family Practice. His office is in Suite 330 of the Doctors Park Building, 9600 Lile Drive, in Little Rock.

**DR. MICHAEL J. WEBER**

A native of Dubuque, Iowa, Dr. Michael Weber received his pre-med education at the University

of Iowa in Iowa City. In 1974, he was graduated from the University of Iowa College of Medicine.

Dr. Weber's internship was at North Carolina Memorial in Chapel Hill. From 1975 to 1978, he served an Orthopaedics Residency at the University of Arkansas College of Medicine.

Dr. Weber is an instructor at the University of Arkansas College of Medicine in Little Rock.

\* \* \* \* \*

The Pulaski County Medical Society has added one courtesy member to its roll:

**DR. M. CARL COVEY, JR.**

Dr. Carl Covey is a resident in the Anesthesiology Department at the University of Arkansas College of Medicine. He received his medical degree in 1979 from the University.



**O B I T U A R Y**

**DR. JOSEPH B. WHARTON**

Dr. Joseph Wharton of El Dorado died August 7, 1980. He was born December 6, 1911.

Dr. Wharton received his pre-med education at Washington and Lee University in Lexington, Virginia, and his medical education from Tulane University in New Orleans. He served his internship at Illinois Central Hospital and Metropolitan Hospital in Cleveland.

Dr. Wharton was a diplomate of the American Board of Abdominal Surgery, a member of the Southwestern Surgical Congress, St. Mary's Episcopal Church in El Dorado and a veteran of World War II.

He is survived by his wife, Mrs. Iola Holt Wharton, a son and two daughters.

THINGS

TO

COME



#### NOVEMBER 14-15

*Vascular Anomalies of the Brain: Traditional and Modern Concepts.* Sponsored by the University of Mississippi School of Medicine. Registration fee \$175. Program meets criteria for 10.5 credit hours in Category I of the Physician's Recognition Award of the American Medical Association.

To register, contact the Division of Continuing Health Professional Education, University of Mississippi Medical Center, 2500 North State Street, Jackson, Mississippi 39216. Phone (601) 987-4914.

#### AMERICAN HEART ASSOCIATION

The American Heart Association has announced the following meetings. For further information, contact Neal Moore, Public Relations Director, American Heart Association — Arkansas Affiliate, 909 West Second, Post Office Box 1610, Little Rock 72203; phone (501) 375-9148.

*November 17-20.* 53rd Scientific Sessions, Miami Beach Convention Center, Florida.

*November 17-19.* Council on Arteriosclerosis and the American Society for the Study of Arteriosclerosis' 34th Annual Meeting, Miami Beach Convention Center, Florida.

*November 17-20.* 44th National Conference on Thrombosis and Hemostasis, Miami Beach Convention Center, Florida.

#### 1981

##### January 12-17

*Survival of Private Practice.* First International Congress of Private and Independent Doctors. Sponsored by the General Practitioners' Society in Australia. Conference will bring together doctors from all over the world interested in preserving the traditions and rights of private medical practice. Sydney Hilton, Sydney, Australia. Registration fees (received after September 12th) \$300 Physicians; \$155 for spouse. For further information, contact: IATROS Steering Committee, Post Office Box 2548, Sydney NSW 2001, Australia.

##### March 22 - April 3

*Clinical Cytopathology for Pathologists — Postgraduate Course.* The Johns Hopkins University School of Medicine. Designed for pathologists

who are certified (or qualified) by the American Board of Pathology (PA), or international equivalent. Credit hours 125 in AMA Category I.

Application is to be made before January 28, 1981. For details, contact: John K. Frost, M.D., 610 Pathology Building, The Johns Hopkins Hospital, Baltimore, Maryland 21205; phone (301) 955-3520.



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#### MESSAGE FROM A

#### CONSTITUTIONAL CONVENTION DELEGATE

This past year I have had the rare privilege of serving as a delegate to the Constitutional Convention of the State of Arkansas. As one of the 100 delegates elected from the legislative districts, I have learned a great deal about Arkansas' present Constitution and about some of the problems of our present system of government. We worked many long hours during the nine week session of 1979 and the final two week session this summer. Many brought personal concerns — problems of which we had become aware in our own localities — and wanted to correct. Gradually, we merged these needed changes with those provisions of the 1874 document which we thought should be maintained into the proposed document which will be submitted to the electorate in November of 1980.

Of course, not all the changes were approved by all delegates and not all the changes sought were adopted, but the changes we made were approved by at least 51 delegates. All were seen as means of improving the operation and accountability of Arkansas government.

Accountability was a major goal of the convention. At every opportunity we made the elected official answer to the electorate.

Recall provisions for both state and local elected officials were adopted as a safeguard to prevent abuse of the four year terms. The lengthened term is designed to allow officials time to



implement their programs, spending more time serving the public and less time running for office.

The salary limits set in the 1874 constitution were removed and replaced by a commission which will make recommendation to the State legislature. This provision will remove the present problem of the legislature setting its own salaries and the difficulty of setting adequate salaries for the many other public servants ranging from judges to clerks.

The Legislative article also sets up single member districts which are designed to help the voter know who represents him and to equalize the prestige and influence of individual legislators.

The 1874 Constitution is a product of the days following Reconstruction. There are many provisions in that document which were reactions to abuses of those days. Two year terms, millage limits on everything except schools, constitutionally set salary limits and election of almost all government officials, some of whom had been appointed under previous constitutions, are just a few of these provisions.

The main changes address those kinds of provisions in an effort to make Arkansas government less costly and more efficient. The voter will be able to vote for millage changes to provide needed services such as libraries which now operate on one mill. More importantly, this will provide home rule. Local people should be able to effectively deal with local problems and interests.

The judicial article provides for needed reforms without much actual change. There would be a court system with four levels: the Supreme Court, the Court of Appeals, the Circuit Court which would have three divisions — law, chancery and family matters, and the County Trial Court. The County Trial Court will take over the jurisdictions of all the lower courts, such as police courts, justice of the peace courts and municipal courts. Juvenile matters which are presently the responsibility of each county judge will be removed to become part of the jurisdiction of the division of the Circuit Court which handles family matters. Legally trained judges should vastly improve the handling of these very difficult and important cases.

The most important single article is probably the Finance and Taxation Article which addresses the revisions needed to make the taxing system

more fair. The new provision allows for uniform assessment throughout the state on tangible personal property, intangible personal property and no more than three classes of real property. (Intangible personal property may be exempt, as it now is.)

Agricultural, timber and pasture land would be assessed based on its ability to produce income or its use, and other property could be taxed on either its use or fair market value.

In general, this taxation proposal retains present practice with a slight shift from residential property to property which produces income.

In November of this year the voters of Arkansas will be faced with many important decisions. Perhaps the most important to Arkansas' future is whether to pass the proposed Constitution of 1980.

Every article of the proposed new charter is an improvement over the 1874 document. The present 1874 Constitution is a document which was passed following Reconstruction. It has been amended 58 times in the past to meet changing needs as they arose. Now, we have an opportunity to pass a constitution which is much more flexible but retains many of the protections which the 1874 document contained against abuses.

It is urgent that each of us study the proposal and urge others to become informed. All of the delegates are available for programs and the proposal is available from the Secretary of State's office or the office of the Constitutional Convention, Capitol Hill Building, Little Rock, Arkansas 72201. The convention office can also provide the names of delegates near you. Call 371-7712. For more information, contact Mrs. Michael C. Young of Prescott, Arkansas, at 887-5349.

I hope that each of you will take the time to read the 1980 proposed constitution. Its passage could mean better government for Arkansas. Local control by the electorate is what we all say we want. Now we can vote to have it.

Contact your delegate about speaking to your local medical societies. Your delegate can also obtain copies of the document for your members. Become informed and VOTE!

"I'll be there."

Gail Marie Young  
(Mrs. Michael C. Young)  
Prescott, Arkansas 71857

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NEWS—Our readers are requested to send in items of news, also marked copies of newspapers containing matter of interest to the membership.

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## Ileo-Colic Intussusception Masquerading As Midgut Volvulus

E. S. Golladay, M.D.,\* and Joanna J. Seibert, M.D.\*\*

The usual presentation of an acute volvulus is that of the sudden onset of vomiting bilious material and abdominal pain. With the high obstruction secondary to a malrotation, abdominal distention is unusual. If the abdomen is tender, one expects compromised blood supply to the bowel and urgent derotation of the volvulus before infarction occurs is essential. The characteristic beak appearance of the duodenum in conjunction with the relative absence of distal air is virtually diagnostic of this entity. When x-ray findings of malrotation are found in combination with high intestinal obstruction and tenderness in the mid-epigastrium, the diagnosis seems almost certain. We recently treated a child with both the clinical and roentgenographic signs of midgut volvulus who had intussusception.

### Case Presentation

A five-month-old black female child first presented with a one-day history of fever, rhinorrhea, and one episode of vomiting. There was no history of pain, she passed a normal bowel movement during examination. Her weight was 5.32 kilograms (third percentile for age) and she was afebrile. No masses, organomegaly, abdominal distention, or tenderness was appreciated on abdominal examination. The abdomen was relatively flat. Rectal examination was normal and brown guaiac negative stool was obtained from the rectum.

The mother was instructed to limit oral intake to clear liquids and the child was sent home with instructions to return should subsequent difficulties appear. In approximately six hours, the mother returned to the clinic because she had

noted a large bloody bowel movement and the child had had four episodes of bilious vomiting. On repeat examination of the abdomen, direct epigastric tenderness and guarding were elicited but there was no rebound tenderness. Radiograph examination of the abdomen showed a dilated stomach and duodenum with very little distal air. The duodenal gas terminated with a "bird's beak." (Figure 1) A diagnosis of malrotation and midgut volvulus was made and she was taken to the operating room. Under general anesthesia, a mid-epigastric, relatively fixed, soft mass was pal-



Figure 1.

Supine radiograph of the abdomen showing air in the stomach and in the duodenum with very little distal gas consistent with a duodenal obstruction. Note the beaked appearance to the duodenal gas.

\*Department of Pediatrics and Surgery, University of Arkansas for Medical Sciences and Arkansas Children's Hospital, Little Rock, Arkansas.

\*\*Department of Pediatrics and Radiology, University of Arkansas for Medical Sciences and Arkansas Children's Hospital, Little Rock, Arkansas.

Address Reprints To: Dr. Joanna Seibert, Arkansas Children's Hospital, 804 Wolfe Street, Little Rock, Arkansas 72201.



pated. The abdomen was entered through a right upper quadrant transverse incision and an ileo-colic intussusception with herniation of the duodenum between the ileum and colon was found. (Figure 2) The intussusception was reduced by taxis without difficulty and the duodenum was freed. The postoperative course was uncomplicated. In subsequent follow-up, she has had no difficulties.

# Discussion

Intussusception commonly presents with vomiting and passage of bloody stools. Malrotation has similar symptomatology. However, the predominant feature of intussusception is intermittent abdominal pain. Abdominal distention is a com-

mon finding in intussusception. The symptomatology of malrotation with volvulus is similar with vomiting and passage of blood per rectum, however, the abdomen is usually not distended. A mass is frequently palpable in intussusception and abdominal tenderness is unusual. Conversely a mass is unusual in malrotation and tenderness is common. Although the diagnosis of intussusception might have been made by barium enema in our case, the preferred form of diagnosis for malrotation with volvulus is an upper gastrointestinal series. As the plain film was a positive contrast study, with air outlining the "bird's beak," this was felt to be unnecessary. This is reported as an interesting variant of the intussusception complex.

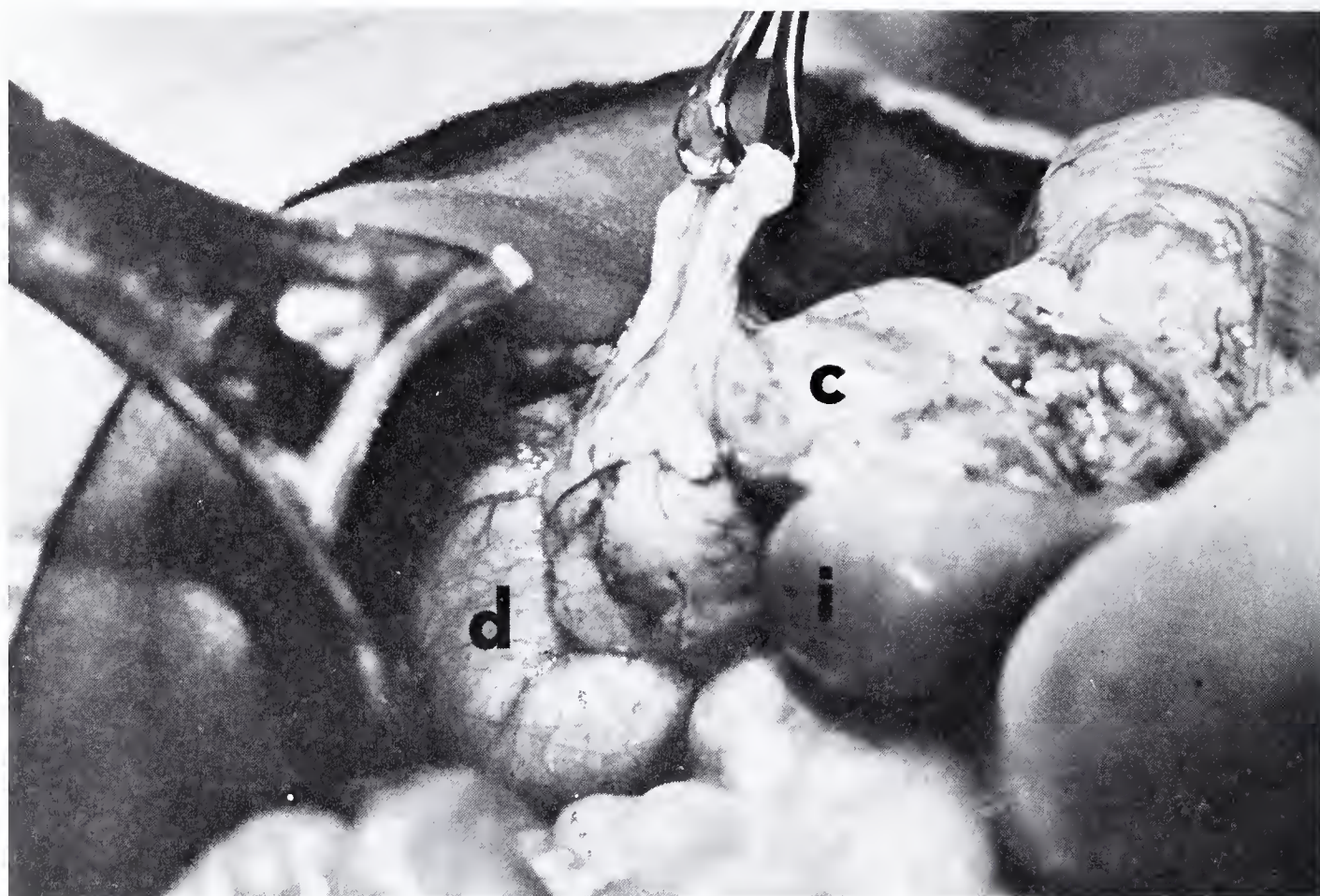


Figure 2.

Intraoperative photograph showing (d) duodenum herniated between the intussuscepting (i) ileum and (c) colon. Clamp is on the appendix.



# History of Allergy

## University of Arkansas School of Medicine

Alan G. Cazort, M.D.,\* and Vida H. Gordon, M.D.\*\*

There is no history of allergy being taught at the Arkansas School of Medicine prior to 1935. For two decades Alan G. Cazort was the only physician in the state limiting his practice to allergic diseases. He had observed when he was at the army barracks in 1918, that he had complete freedom from asthma or hay fever, but that when he returned home he would get it again. In 1919, he went to Hendrix College and observed again that at the rooming house at Hendrix he would be free from asthma only to get it again when he returned home. By the time Dr. Cazort was graduated from medical school in 1928, he had familiarized himself with the scientific literature regarding skin tests, the commonest sensitizing (allergens) and the preparation of extracts and he taught himself regarding the therapy and technique.

On one occasion Dr. Cazort noted that when he sat on an old divan, he broke out with urticaria and had paroxysms of wheezing. Subsequently, he collected dust from this divan with a vacuum cleaner, made an extract from the dust and did a scratch test on his own arm. He obtained a wheal and flare reaction with it, showing him his first positive test to an allergen.

In 1930 Dr. Cazort joined Dr. A. C. Shipp in private practice with the primary purpose of caring for all patients suspected of having some allergic basis for their symptoms. In connection with this pursuit, Dr. Cazort became disenchanted with commercial extracts, particularly for testing purposes and he began making many of his own. This involved climbing trees to collect pollen and purchasing a few cents worth of about twenty (20) fruits and vegetables. The grocer couldn't understand why a shopper would do this, until he developed a severe dermatitis of his hand, forearms and face, and tests and avoidance proved it to be due to carrots.

The first talk on allergy to the Pulaski County Medical Society was made by Dr. Ray M. Balyeat of Oklahoma City in the early 1930's.

Among the pioneers in clinical allergy in this country were: Dr. Billy Duke at Kansas City;

Dr. Frances M. Rackemann, Massachusetts General Hospital in Boston, Massachusetts; Dr. Bret Ratner, University of New York, New York, N.Y.; Dr. Charles H. Eyermann, Washington University, St. Louis, Mo.; Dr. Robert Cooke, New York City; Dr. Warren Vaughan in Virginia; Dr. Harry Huber of Chicago, Illinois, and Dr. Milton Cohen, Cleveland, Ohio, now in Florida. Dr. Cohen was reared in Pine Bluff, Arkansas. Dr. Cazort furthered his education in clinical allergy by brief two- or three-day visits to many of these men and his direct comment was: "It was always a little surprising to me that the great treated me as an equal rather than a green farm boy from Arkansas. Later the reason became clear. They really were great!"

In 1935, Dr. Cazort limited his practice to allergy and volunteered his services to the medical school in Arkansas. He even provided from his own office many of the extracts, and continued to do so for many years. At that time text books in medicine were very deficient as to descriptions, pathophysiology, etiology, differential diagnosis and treatment of allergic diseases. Together with the medical students, Dr. Cazort tried to find out in this clinic human tolerance to epinephrine and especially just what effect it had on the blood pressure and vital capacity. They concluded that there was a definite measurable relationship and that any immediate reaction could be controlled by putting a tourniquet above the site of the injection.

During World War II, Colonel Clay Chenault in Washington looked up Dr. Cazort's medical record in World War I as he had been rejected because of his asthma. It was at that time that he agreed to teach internal medicine five half days a week. This forced closing the Allergy Clinic. After the war in 1949, Dr. Thomas Johnston joined Dr. Cazort and later Dr. Purcell Smith. All three conducted the Adult Allergy Clinic at the now UAMS. During this reorganization, small groups of students but no house staff were assigned to the Allergy Clinic so they were doing less teaching and more service to more patients. All of this was rendered on a volunteer basis. During this period, allergy training became elective

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but the students were in the clinic such a short time that continuity of the patient to the student was lost. Gradually the Adult Allergy Clinic has become a service clinic only, since neither medical students nor house staff are assigned to it. Dr. Purcell Smith and Dr. Bill Hefley, both graduates of this school, are conducting it.

The Pediatric Allergy Clinic was started at the old Medical Clinic Center on McAlmont Avenue in 1947 by Vida H. Gordon who was Associate Clinical Professor of Pediatrics and in private practice. This continued until 1962 when Dr. Gordon left practice and the city for special training in Immunology at the Children's Hospital of Pittsburgh.

In 1964 the allergy training program for the Medical School was reactivated when Dr. Gordon, who was the first certified allergist in Arkansas, returned to the University of Arkansas Medical Center full time as Associate Professor of Pediatrics and Microbiology and Director of the Pediatric Allergy Training Program. This was a two year fellowship training program in Pediatric Allergy approved by the American Medical Association and the Sub Board of Pediatric Allergy of the American Academy of Pediatrics. It was the first approved program to be established at the University of Arkansas Medical Center and one of three approved programs in a five state Southwest region. The Fellows received training in both pediatric and adult allergy, dermatology, pulmonary function, ear, nose and throat, immunology, biochemistry and biostatistics. Four allergists were fully trained by this program from 1966 to 1974 and three others were partly trained with help of this program, some spending six

months full time and some spending four hours per week over a period of years, helping them to qualify for certification by the new American Board of Allergy and Clinical Immunology. Three of the allergists fully trained by this program are practicing in Arkansas, Dr. Helen Rountree, Benton, Arkansas, and Drs. Kelsy Caplinger and Joseph Matthews, both of Little Rock. Dr. Geraldine Feldman returned to Massachusetts with her husband to practice there. The three allergists partially trained through this program are currently practicing allergy in Arkansas and all three have been certified by the new Board of Allergy and Clinical Immunology.

There are currently 12 certified allergists in Arkansas and 18 physicians practicing allergy in a state of over two million people. This is still way below the desirable number and the majority are located in Little Rock. January 1, 1975, Dr. Gordon became Professor Emeritus. There has not been a Director of the Allergy Program appointed to take her place. As a result the training in this state of allergists and of medical students and house staff in the discipline of allergy has been markedly reduced. There are currently two small clinics at the University of Arkansas Medical Center and Arkansas Children's Hospital, directed by Dr. Rosalind Abernathy, to which junior students only, attend. The house staff received monthly lectures on allergy in 1975-76. These were given mainly by the allergists practicing in Little Rock. With the population in this state, there is great need for the training program for allergists to be resumed, since experience has told us that there is a good chance that about two-thirds of those so trained are likely to stay in Arkansas where they are needed.



# What Can the Clinician Expect From the Chemotherapy of Tumors of the Breast, Colon, and Lung?

Frank J. Panettiere, M.D., F.A.C.P.\*

## INTRODUCTION

Chemotherapy can prolong the *useful* life expectancy of the majority of patients with breast cancer. A small, but definite proportion of patients with large bowel or lung cancer have objective regressions of tumor with prolonged relief of symptoms. A few lung cancer patients are actually cured by chemotherapy plus a brief course of radiation therapy.

## BREAST CANCER

Much can be offered for the patient with breast cancer with relatively little toxicity. This is because a large number of anticancer drugs are beneficial to treat breast cancer. Therefore subtoxic doses of multiple drugs can be used together to enhance antitumor effect without intolerable toxicity. For example, Cytosan, Methotrexate, and 5-FU have myelosuppression as major toxicities. When given *alone* in full therapeutic doses, Methotrexate, especially, but the other two also, is likely to cause nausea and vomiting. However, when they are given *together*, smaller doses of each must be used to decrease the risk for additive myelosuppression. Such smaller doses are small enough that they are unlikely to cause nausea or vomiting. In addition, drugs that do not have bone marrow toxicity can be added to the combination of Cytosan, Methotrexate, and 5-FU. One of these is Oncovin (Vincristine). This drug's primary dose-limiting toxicity is neuropathy. Since this does not increase the toxicity of the other three drugs, a patient can receive full doses of it without decreasing the dose of the other three agents. Another drug known to have an effect against breast cancer is Prednisone. It can be added to increase antitumor effect without increasing the toxicity of any of the other four drugs. Therefore, we can combine together Cytosan, Methotrexate, 5-FU, Vincristine, and Prednisone and use them in doses which will not add up to cause intolerable toxicity for our patient.

But, by combining these five different drugs

together, one is actually attacking the tumor in five different ways at the same time. Cytosan is an alkylating agent and so it attaches to DNA. Therefore, when the tumor cell attempts to divide, its DNA strands are broken, killing the cell. Methotrexate is an antagonist of folic acid which is vitally important for rapidly proliferating cells. Therefore Methotrexate exerts its antitumor effect as an anti-vitamin. 5-FU has a similar mechanism of action; it is an antipyrimidine. Proliferating cells pick it up instead of the normal metabolite, uracil. This so affects cell metabolic processes as to cause cell death. Oncovin acts to destroy the metaphase spindle. Therefore, normal metaphase chromosome alignment can not occur and the tumor cell passing through its phase of the cell cycle is lethally injured. Prednisone's mechanism of action is less clearly understood. It may be that the suppression of endogenous ACTH decreases the output of adrenal sex hormones to cause its effect.

Combines appropriately, in doses fully tolerable by outpatients, these drugs cause breast tumor shrinkage 65% to 70% of the time, with complete tumor disappearance in 10 or 15% of them. Such results are seen with doses resulting in very little symptomatology.

Doses vary greatly depending on such factors as bone marrow tolerance (which may be impaired by prior radiation therapy, or by tumor involvement, or age, etc.), and hepatic or renal function to handle the metabolism of these drugs. Nevertheless, as a general rule, the treatment program is as follows: Oncovin, at a usual dose of 1 mg, plus Methotrexate, at a dose of 10-15 mg plus 5-FU at a dose approximating 500 mg are given intravenously "push" weekly for eight weeks of induction. During this period, Cytosan is taken by mouth daily at a usual dose of 100 mg. Prednisone is started at 45 mg daily (15 mg three times daily with meals) for two weeks; then 30 mg daily for two weeks; then 15 mg daily for two weeks; then 10 mg daily for two weeks; then 5 mg daily for two weeks; then the Prednisone permanently discontinued. After the eight week induction period, treatment is decreased in intensity. On-

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## WHAT CAN THE CLINICIAN EXPECT FROM THE CHEMOTHERAPY OF TUMORS OF THE BREAST, COLON, AND LUNG?

covin may or may not be then permanently discontinued and the intravenous drugs are given every two weeks, rather than weekly. At that time, oral Cytosan is given on seven day courses beginning with each of the every two week intravenous injections. Tapering of the Prednisone is concluded during this time. This combination has been given to thousands of patients and so its potential toxic effects are fully appreciated. About 1/3 of patients will have temporary hair loss or temporary neuropathy. Much rarer is nausea or vomiting (one in 50 in the author's experience). Asymptomatic myelosuppression is readily manageable by drug dose adjustments.

This five drug combination may cause tumor shrinkage in metastatic sites as well as primary ones. Many an inoperable "inflammatory" breast cancer becomes smaller and resectable after only a few weeks of such chemotherapy. The problem, of course, is that the duration of effect is limited to several months up to a few years. Even when a patient has had prolonged complete disappearance of tumor, only a few months after chemotherapy is discontinued, breast cancer will recur.

For those whose tumors grow despite first-line therapy, the next choice is both less effective and also significantly more toxic. This involves the drug Adriamycin which, when given by itself, can cause breast cancer shrinkage for approximately 40% of patients. However, only 5% have complete clinical disappearance of tumor. Such responses are not very durable, and generally last from three to nine months. Moreover, Adriamycin offers significant toxicity including several hours of nausea and vomiting, plus the risk of local skin necrosis if the drug extravasates, plus the potential for cumulative toxicity with cardiomyopathy. Combinations of Adriamycin with other drugs have not, in large-scale cooperative group studies, turned out to be more effective than Adriamycin alone.

The third-line choices are not more likely to be toxic than Adriamycin but they are much less likely to be effective. Only 10 to 15% of such patients can expect a few months of tumor regression to such third choices. They might benefit more from endocrine approaches whether additive (such as by the administration of sex hormones) or subtractive (by either surgical ablation or the estrogen antagonist, Tamoxifen). Responses to such hormonal manipulation, when they occur, are usually not very great in magni-

tude. Only very rarely is complete disappearance of tumor seen. However, if tumor responses do occur, a duration of six months to two years is not uncommon and with only minimal toxicity.

Chemotherapy today has a very important place in the *initial* management of the patient who has already had total clinical resection of all known breast tumor but who has a high likelihood that it will recur. When breast cancer disseminates through lymphatic channels, it appears that it is simultaneously spreading through the hematogenous route. Therefore, if regional lymph nodes are positive then, most likely, distant deposits of tumor most likely also exist. Therefore, although postoperative chest wall radiation therapy greatly decreases the risk for local tumor recurrence, it has no effect distant metastatic disease and overall survival. So, for all practical purposes, positive nodes means dissemination beyond the reach of even radical surgery or radiotherapy.

Therefore, breast cancer with positive regional lymph nodes should be considered as systemic disease and treated with some form of systemic therapy. Endocrine therapy does delay breast cancer recurrence but has no effect on eventual survival duration. That leads us to the other form of systemic treatment; namely, chemotherapy. The most effective chemotherapy for gross disseminated disease should be the optimal one to treat any microscopic tumor that might remain. Whether we are speaking of premenopausal or postmenopausal women, or irrespective of the number of positive nodes, one year of systemic chemotherapy with the five drug combination described alone very significantly decreases the risk that breast cancer will recur. Since such adjuvant chemotherapy has been used on a wide scale for only five years, all we can say with any certainty is that such treatment greatly decreases the likelihood the tumor will recur over that period of time. However, five years disease-free is not tantamount to cure in breast cancer. Today we can only speculate about the eventual cure rate of such patients. Still, if all a year of postoperative chemotherapy does is only to delay recurrence for five years or so, preventing disease recurrence is the best palliation. Additionally, we can reasonably hope that at least some of these may be cured.

### COLON CANCER

5-FU was sensitized in 1957. We all know its effectiveness is limited, but there is still no drug

better than it in the treatment of cancer of the large bowel. However, since then we have learned better how to use it, by itself and in combination. Today, a secondary drug, Methyl CCNU, may be nearly as effective as 5-FU. It has not yet been approved for commercial distribution by the FDA, although many of us have used it for more than seven years now. Many believe that the best way to treat disseminated colon cancer today is a combination of 5-FU plus Methyl CCNU. Before we can reasonably discuss the effects of this combination, we should first review what we can expect when 5-FU is given by different routes. These include the standard intravenous "push" technique, a continuous infusion into a peripheral vein, a continuous infusion into the hepatic artery, and by mouth.

By I. V. push, 5-FU can be given once-a-week, or once-a-day for five days in-a-row every month. Five days in-a-row is either as effective, or more effective, than weekly. No data suggests that weekly is superior. When 5-FU is given by either of these two fashions, one can expect temporary shrinkage of colon cancer lasting for several months in about 15% of patients. Nausea and vomiting are unlikely but there is some risk of stomatitis. The major toxicity from this route is myelosuppression.

Alternatively, 5-FU may be given by four- or five-day continuous infusions into a peripheral vein. In this way, much larger doses than by bolus injection can be given without appreciable myelosuppression. By infusion, the dose-limiting toxicity is gastrointestinal intolerance with mucositis, nausea, vomiting and diarrhea. At first look, trading the convenience of peripheral vein bolus injection, with its attendant myelosuppression, for the inconvenience of a continuous infusion for four or five days with attendant gastrointestinal toxicity does not seem worthwhile. However, as mentioned later, this technique may be valuable in combination therapy.

Direct infusion into the hepatic artery can be very helpful for patients with colorectal tumors metastatic to the liver. A catheter is inserted percutaneously, or under direct vision in the operating room, into the hepatic artery. Following this, 5-FU is infused continuously 24-hours-a-day for some two weeks or more. From this technique, one can expect significant shrinkage of liver metastases, with marked amelioration of symptoms of metastatic disease in the liver, for 75%

of patients. Such tumor shrinkage is seen even in 40% patients whose tumor has progressed during previous administration of peripheral vein 5-FU. This maneuver should be kept in mind by the operating surgeon who might, when indicated, leave a catheter in the hepatic artery when he operates on the patient for other indications. Placement of a catheter under direct vision can be superior compared to one inserted by a precutaneous route because immobilization of the limb during the many days of continuous infusion of chemotherapy would not then be needed.

When 5-FU is administered by mouth, except in rare circumstances, disadvantages outweigh advantages. By mouth, adsorption varies greatly. A patient may absorb anywhere between none and 80% of the administered dose. Absorption tends to be higher on an empty stomach. Interestingly enough when one absorbs 5-FU by mouth, he has higher liver levels than he would have had if he had taken the same dose by a peripheral vein. Therefore, there can be occasional justification for oral 5-FU such as when a patient has bad veins and liver metastases.

As mentioned above, the research drug Methyl CCNU may be as effective as 5-FU in the treatment of colorectal cancer. In animals with colon tumors, and probably also in humans, the effects of 5-FU and Methyl CCNU are additive to each other. Methyl CCNU's major toxicity is myelosuppression. Therefore it is logical to give Methyl CCNU in combination with the non-myelosuppressive continuous infusion schedule of 5-FU. When one reviews large-scale Southwest Oncology Group studies, one sees that although there was no enhanced response rate, there is prolonged survival when continuous infusion of 5-FU was employed with Methyl CCNU compared to a previous Southwest Oncology Group study wherein Methyl CCNU was given with bolus 5-FU. Because the response rate is no better and because the improved survival is based only on comparison with a previous study, the actual advantage of infusion over bolus 5-FU with Methyl CCNU is under question. Soon a prospective randomized study to compare these regimens will be undertaken to see if there is a meaningful difference.

In breast cancer, postoperative adjuvant chemotherapy for the high risk patient is well documented to be beneficial. It remains in question today as to whether postoperative adjuvant



chemotherapy is also beneficial for colorectal cancer. Most of the positive studies compare adjuvant treatment with historical controls. The problem is that the natural history of large bowel cancer treated with surgery alone has improved over the last several decades. So any study will be "positive" if compared with surgery alone results from the past. Studies with concurrent randomization to no treatment control arms are less suggestive of benefit. It would seem optimal to use, as a postoperative adjuvant program, the drugs which are recognized as most effective for disseminated disease. Based on this concept, some 550 colorectal cancer patients have been entered on a continuing study I designed and which began four years ago. Despite this, I could only say that although results are promising, I do not know with any certainty whether such postoperative adjuvant chemotherapy does decrease or delay recurrence.

### LUNG CANCER

Lung cancer is not just one disease but rather several different disorders, histologically and clinically. "Splitters," like the World Health Organization, divide lung cancer to 50 categories. "Lumpers" divide lung cancer into two categories; namely, oat cell and non-oat cell. A majority seems to take a middle ground and use four categories; namely, epidermoid (squamous cell), adenocarcinoma, small cell undifferentiated (oat cell), and large cell undifferentiated. Obviously the problem with discussing chemotherapy drug sensitivity of tumors is similar to antibiotic sensitivity of bacteria. In either situation some drugs are more likely to be effective in some varieties and other drugs are more likely to be useful in others. The problem is we do not know how to predict which lung tumor is likely to respond to which drug treatment program. Our best histologic characterization is imprecise. Some patients with, for example, epidermoid lung cancer might develop tumor regression lasting for months, or years, while others with histologically identical tumors show nothing but drug toxicity when treated identically.

Perhaps 10 or 15% of patients with non-oat cell lung cancer may enjoy prolonged antitumor effect in response to chemotherapy. However, the great majority do not. It is for this reason that the duration of survival for the median patient has not improved since chemotherapy was begun in the late 1940's. Nevertheless the great majority

of patients with non-oat cell lung cancer do benefit in one sense from chemotherapy. They benefit emotionally from the knowledge that, at least, someone is trying, and there is at least some chance. Emotionally, even one chance in ten is far more satisfactory than no chance at all.

As far as oat cell lung cancer is concerned, the situation today is much more optimistic. Many individual drugs offer at least a 25% chance of temporary tumor regression. Combinations of drugs seem to be much better. Combinations of drugs plus radiation therapy seem to be better still. There are patients who were treated with such combinations years ago and now, over five years since all treatment was stopped, they are alive without evidence of tumor.

So, oat cell is occasionally a curable disease! This is a very dramatic improvement from the old situation where in the past the diagnosis of oat cell lung cancer meant a 2% two-year survival. Today the optimal treatment for oat cell carcinoma of the lung appears to be two monthly courses of multiple drug combination chemotherapy, followed by radiation therapy to the area of the primary tumor in the chest and also, prophylactically, to the brain, followed by additional chemotherapy. The chemotherapy, radiation therapy and chemotherapy are given for a total of two years.

### SUMMARY

So, much can be expected today from the modern treatment of the typical patient with breast cancer. For colon cancer one can, at least, expect significant temporary benefit from hepatic artery perfusion chemotherapy but only rarely should we expect objective benefit for the patient with colorectal cancer in general. Postoperative adjuvant chemotherapy for colorectal cancer is promising but certainly unproven at this time. For lung cancer, of the oat cell carcinoma variety, combination chemotherapy plus radiation therapy is not only very likely to cause tumor shrinkage but also can greatly prolong survival and can result in cures.

But, we have been emphasizing *objective benefit* too much! Much more important for the patient's *subjective benefit*. Chemotherapy drugs may offer objective tumor shrinkage in only a very small fraction of patients. But, the offer to *at least try* to do something is emotionally very important to patient and family. At least it gives some hope and the feeling that someone feels he

is worth someone trying to work for. The cancer patient often feels abandoned by family and friends. These all tend to avoid him because they do not want to see what they expect will soon come. On the other hand, when one offers chemotherapy, he is showing the patient that someone is interested in him and feels that he is worth trying to help. Such caring, and even a remote

chance that the drugs will help can assist the patient in preparing for his fate with far less emotional pain. For objective tumor shrinkage, cancer chemotherapy is still rather limited. But for subjective benefit with the emotional comfort that someone feels that he is really worth trying to help can be very valuable for the great majority of patients with malignant disease.





## ELECTROCARDIOGRAM



## OF THE MONTH

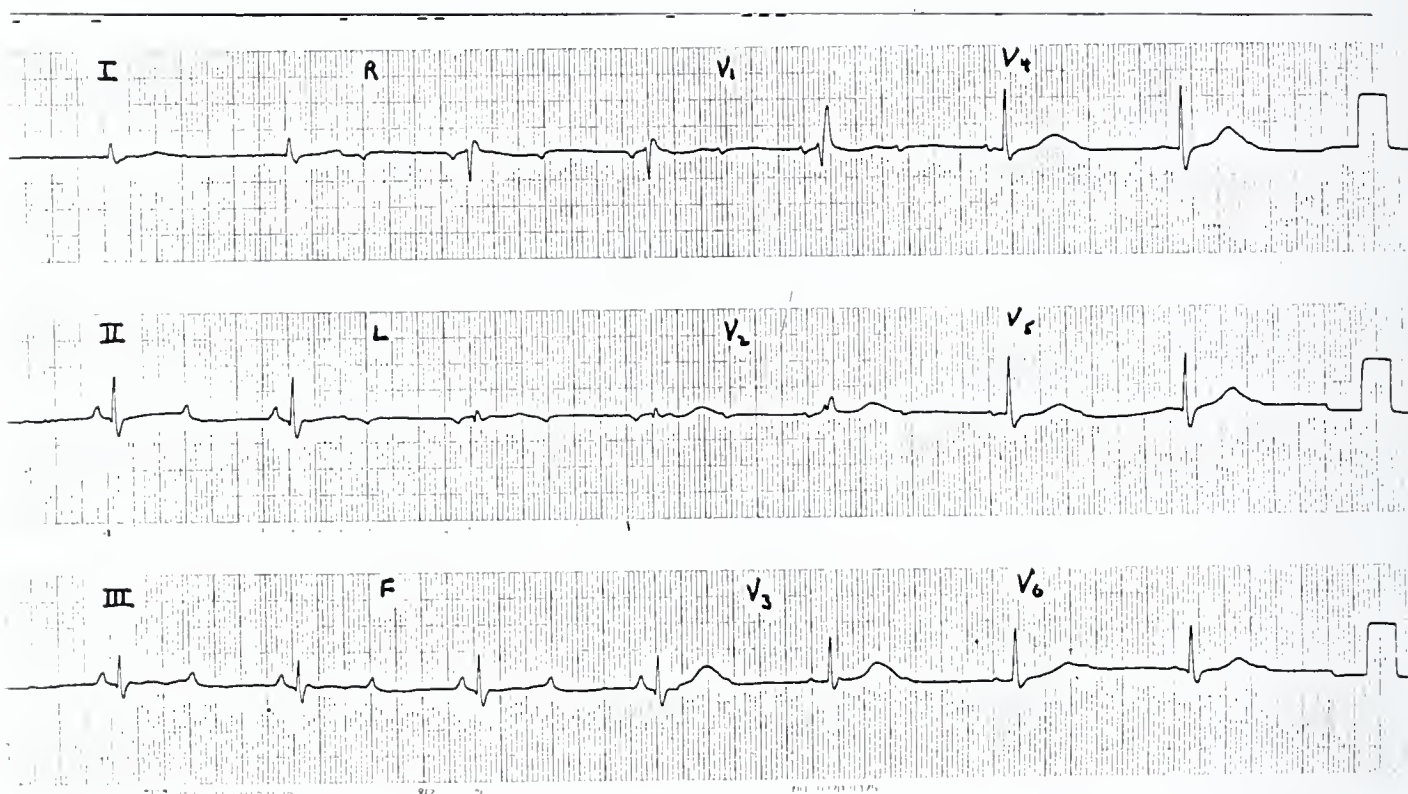
The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 208)

HISTORY: C. P. is a 70-year-old man who presented to the hospital because of syncope. He has a past history of angina and is taking digoxin. The patient's ECG is shown.

Which of the following diagnostic and therapeutic options would potentially benefit the patient?

- A. Holter scan or long rhythm strip.
- B. Temporary pacemaker.
- C. His bundle study.
- D. Serum digoxin level.
- E. CCU observation.



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# Office Orthopaedics

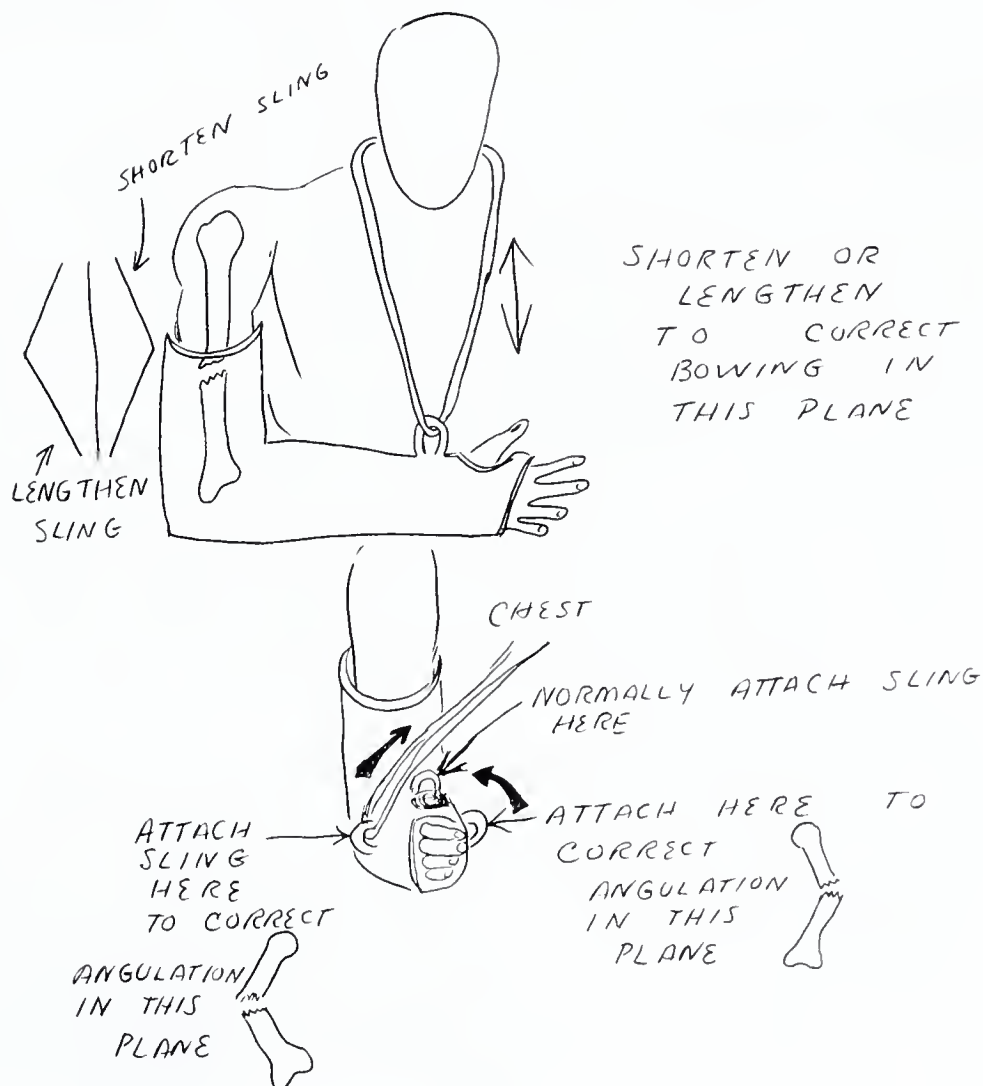
## The Hanging Arm Cast: Re-emphasis

H. Austin Grimes, M.D.\*

Ever since Caldwell introduced the hanging arm cast technique for treatment of fractures of the shaft of the humerus in 1933, this has become the treatment of choice and has the best overall result of any single method of treatment. Periodically, this needs to be re-emphasized in order to not be swayed by the newer methods of treatment of various other fractures.

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The principles of the hanging arm cast dictate that it must be lightweight and no more than two 4-inch rolls of plaster, the elbow is flexed at ninety degrees and the forearm and hand are in the neutral position or in the position for shaking hands. The hanging arm cast, to be effective, must be hanging. It must be providing traction, therefore, the patient will have to sit, stand, and sleep in a semierect position. This can be ac-





complished at home by tilting a chair forward between the mattress and springs, utilizing a regular bed; a hospital bed, of course, can be jacked up to provide this position quite well, but is not necessary. The sling around the neck is padded, a loop of plaster is affixed to the wrist at the level of the wrist, either on the dorsum of the wrist or the volar surface of the wrist depending on need to correct rotation or angulation. The anterior or posterior angulation can be modified either by lengthening the sling or shortening it, depending on the followup films which should be done on weekly intervals. The overall time in the hanging arm cast amounts to approximately six weeks. It should be applied to allow plenty of room for finger motion and as soon as the patient is able to tolerate movement at the shoulder. Let the arm swing free in front of him when he bends over.

This will help prevent adhesive capsulitis or the frozen shoulder syndrome.

When management of the fractured humerus with the hanging arm cast has not been satisfactory by alignment and position, open reduction with internal fixation is usually indicated. Other factors that may require other than hanging arm treatment would be pathological fractures or those associated with vascular injuries or nerve entrapment syndromes which the distal third or fourth of the humerus traps the radial nerve with resultant wrist drop.

#### SUMMARY

The hanging arm treatment is safe and effective in treating almost all levels of shaft fractures of the humerus and behooves those who treat this entity to learn its application.





## EDITORIAL

# The Nervous System

Alfred Kahn, Jr., M.D.

Scientific American is a journal of unusual virtuosity, with top flight authors, writers in various scientific fields, and marvelous illustrations. Two recent articles on the nervous system have been of unusual interest.

"Brain Function and Blood Flow" (October 1978, p. 62) is the title of an article by Lassen, Ingvar, and Skinhoj. Their aim was to determine the localization of function of the human cortex by a direct method using radioisotopes — instead of the old painstaking, time-consuming method of microdissection, ablation, stimulating the exposed cortex, etc. The authors postulated that as in other parts of the body blood flow in the brain would increase with function; this relationship is an expression of oxygen consumption; oxygen is used for reconstitution of adenosine triphosphate which released energy intracellularly. Lassen, et al, credits Sherrington as first having noted an increase in blood flow through the brain cortex at the anatomic site innervating a distal part of the body undergoing muscular activity. The key to the authors' work was measuring radioactive xenon in different parts of the brain after an intravenous injection — during various physical and mental activities. They used 254 scintillation detectors placed outside the head so that each measured approximately one square centimeter of brain surface.

They state that the resting flow follows a set pattern with more flow through the frontal area than elsewhere — 50% higher despite the same number of small blood vessels. The interpretation is that the resting brain is planning behavioral patterns. When stimulus of the eye or ear occurred, appropriate increases in blood flow occurred in the areas of the brain. If the stimulus was more intense or complex than minimal, then

there was additional blood flow in the area and if the stimulus involved increasing complexity, the increased flow spread into other appropriate areas. Performance of a simple job like identifying an object, Lassen, et al, report will not alone cause increased flow in the primary sensory area but also in the memory areas and association areas. Clenching of the fist is said to cause an increased blood flow on the opposite side of the brain in the appropriate area of motor cortex. There is some increase in the sensory association areas that are indirectly stimulated by motor activity. Lassen, et al, conclude that "local changes in blood flow reflect local variations in the intensity of nerve cell metabolism."

The authors particularly emphasize the increased blood flow in adjacent areas and associated areas when complex tasks are performed implying a certain planning of how a particular function will be accomplished. It is of further interest that ablation experiments show that the speech center tends to be a unilateral function and on the same brain side as the dominant hemisphere; however, using blood flow techniques an area comparative to the speech center in the opposite hemisphere also shows increased blood flow with verbalization. They state that complex brain activity causes increased blood flow in multiple parts of the cortex indicating some overall program with subprograms like a computer.

When the brain tackles a particularly tough job, the entire brain shows increased blood flow — in addition to localized areas of increased blood flow. The authors interpret this as meaning that the entire cerebral cortex must function in some situations for the brain to totally understand the problem.

In another highly interesting paper also pub-



lished in Scientific American, Patterson, Potter, and Furshpan discuss "The Chemical Differentiation of Nerve Cells" (July 1978, p. 50). The authors have been particularly interested in the neurotransmitter substances at the synapse. Why, for example, is there a match between the substance released by the transmitting cell and the receptor on the receiving cell. A study of the autonomic nervous system was made to try and determine some of the answers as is known to every medical student. There are two types of synaptic chemicals in the peripheral autonomic nervous system: acetyl choline and nor-epinephrine. The authors were intrigued by the process which leads some autonomic cells to be nor-epinephrine secretors and others to be acetyl choline secretors.

They grew cultures of autonomic nerve cells in cultures using nerve growth factors and the nutrients which autonomic nerve cells require for growth. The cells form axons and dendrites; the ability to manufacture chemicals. If there are no cells other than autonomic nerve cells present then the nerve cells seem to manufacture only nor-epinephrine. This nor-epinephrine can be released but it does not cause any electrical activity on the cultured target cell. If the autonomic cells are cultured with non-nerve cells, then some of the nerve cells form acetyl choline while others form non-epinephrine. The acetyl choline synapses are said to be electrically active and excitatory. Patterson, et al, wondered if the non-neuronal exerted their effect physically or chemically; it proved to be the latter as the medium in which the non-neuronal cells grew in and could stimulate acetyl choline forming cells — and the number of acetyl choline forming cells varied in proportion to the amount of broth added from the non-neuronal cells; there was an inverse relationship with nor-epinephrine. The authors feel that the young neuron cells can be either acetyl choline forming or nor-epinephrine forming at an early age; the cell will grow to be one or the other depending on factors in the neurons' environment. It is of interest that at one stage of the neurons' development it may form both nor-epinephrine and acetyl choline; apparently, the basic stimulus to the neuron is to form nor-epinephrine, and only under external influences does it become converted to acetyl choline formation; this duality occurs only in the very early neuron's development.

Patterson, et al, found that cells' different tissues had varying degrees of stimulating power to stimulate the neuron to form acetyl choline: they varied in descending order of potency: skeletal muscle, heart muscle, and liver. The authors are definite in pointing out that the conditions that exist in cultures do not universally obtain in the body, as there are relatively few acetyl choline forming cells as compared to nor-epinephrine forming cells. The factor which seems to prevent the majority of the cells from being acetyl choline formers in the stimulation of the young cells by other cells in the nervous system — thus, frequent depolarization leads to nor-epinephrine forming cells, rather than acetyl choline despite the chemical stimulus by the many non-neuronal cells.

It appears that young neuron cells are not permanently committed to a special type of synaptic chemical. This capacity appears later in their development and reflects chemical and neurologic stimuli.



#### ANSWER—Electrocardiogram of the Month

**DISCUSSION:** The ECG shows 2:1 AV block. The problem in part becomes that of distinguishing Mobitz I from Mobitz II block, both of which may be seen with 2:1 conduction. If one can demonstrate areas of typical Wenckebach with other than 2:1 conduction (as on a Holter or rhythm strip), then the odds favor the 2:1 pattern representing 2:1 Wenckebach. Since Mobitz II may abruptly progress to complete heart block, a temporary pacemaker could be very useful, especially with Mobitz II in the setting of acute infarction. A His bundle recording will distinguish Mobitz I from Mobitz II. Mobitz I block is relatively commonly seen with digitalis excess while Mobitz II block is much less commonly seen as a manifestation of digitalis intoxication. CCU care would have obvious benefits to a patient with this problem. Thus, all listed options would be potentially beneficial to the patient.

## "From Other Years"

*Arkansas Medical Monthly*  
Vol. I No. 9 December, 1880

### **MALARIAL HAEMATURIA**

By J. M. Gist, M.D.

By your permission, I will report a case of malarial hemorrhagic fever, being the fourth case I ever saw in twenty years' practice in White County.

On the 21st of August last, I was called in consultation with Dr. H. C. Jones, in Searcy Valley, to see Miss M., fourteen years old, who had a rigor on the night of the 19th, without being followed with any febrile excitement. On the 20th, at 11 o'clock a.m., rigor was repeated, followed by haematuria, hot, dry skin and frequent pulse. Dr. Jones had given calomel and quinine freely. Arrived at 10 o'clock a.m., 21st, skin hot and dry, small frequent pulse, with haematuria every hour or two; the friends crying around the bed; patient very restless. We decided to try to get up a vicarious action of the skin with the kidneys, at the same time acting on the liver. As the stomach was very irritable, we gave calomel alone every

three hours; applied mustard over the region of the liver and stomach; and having seen an Arkansas doctor's hot corn treatment in the Medical Brief (sorry I have forgotten his name), we adopted it to get up a profuse perspiration by putting twenty-four ears of corn in a vessel to boil, taking twelve at a time, wrapping them up and putting them all around the patient, removing as the corn cooled, for two hours. We got a profuse perspiration, which quieted our patient. Haematuria diminished every hour, ceasing by 9 o'clock at night.

The bowels moved by 9 o'clock that night — black discharges; patient slept kindly; waked up next morning feeling much better; called for breakfast; convalesced from that time. I received a letter from the young lady since, thanking us kindly, saying that if it had not been for our prompt treatment she never would have had the pleasure of writing.

Hope some of our friends will try like treatment and report.

Beebe, Ark., December 3, 1880.



## **MEDICINE IN THE NEWS**



### **THE MONTH IN WASHINGTON**

A provision barring freedom of institutional choice for Medicaid patients has provoked the strong opposition of the American Medical Association.

Approved by the Senate Finance Committee as part of a budget cutting package, the controversial provision would repeal the present right of Medicaid patients to exercise free choice in selecting qualified suppliers of medical services. The amendment authorizes states to limit access to care to certain hospitals and other providers.

Although the provision would set an important precedent involving freedom of choice and raises again the question of a two-tier health system, it was scarcely noticed by the public press in the hectic scrambling of a Congress that wishes to

be elsewhere than Washington in this election year.

In a letter to committee Chairman Russell Long (D-LA), the AMA said the provision "would change the entire thrust and philosophic basis for the Medicaid program. Rather than continuing the program as designed, to provide access to mainstream medical care for the poor, it would authorize a two-tiered system of providing care — one for the general public and another for the poor."

James H. Sammons, M.D., AMA Executive Vice President, said this major redirection of the program is "highly undesirable."

Dr. Sammons called for public hearings and opportunity for consideration by the public and the committee. "We deplore such precipitous ac-



tion that would have the long term effect of institutionalizing a two-tiered system of care," he said.

The provision is characterized as affecting only institutional services, but "in our view this proposal would necessarily effectively limit the patient's choice of physician as well," he said. "This result is inevitable since patients will be limited to physicians having admitting privileges at the 'Medicaid Hospital'."

The AMA believes that the Medicaid proposal "is an ill-conceived proposal that would bar Medicaid patients from mainstream medical care," the AMA said. "Any benefits from cost-savings that would be achieved are overcome by the negative impact that this provision would have on the poor through the establishment of a separate health care system for the poor."

\* \* \* \*

A proposed provision in the Mental Health Systems Bill that would have provided a "Bill of Rights" for the mental patients has been overwhelmingly defeated on the floor of the Senate.

Senator Robert Morgan (D-NC) with the strong backing of the AMA and the American Psychiatric Association (APA) argued that the private right of action permitted in the provision "will simply serve to encourage frivolous lawsuits and put the federal courts in the business of reviewing medical decisions on a case-by-case basis."

The measure would have overridden 35 existing state laws and "provide a legal tool to coerce states to spend more money on mental health services," the Senator said in a "Dear Colleague" letter to fellow Senators.

The AMA earlier had dispatched a Legislative Alert urging support of the Morgan Amendment, declaring the Senate Bill "objectionable" as it then stood. The APA feared that court suits by patients would have led to medical treatment decisions by the judiciary, creating serious legal impediments to proper treatments.

The proposed "Bill of Rights" for mental patients, supported by Sen. Edward Kennedy (D-MA), would have given patients the right to refuse treatment and require that their freedom not be unnecessarily restricted, among other provisions.

The overall bill extends and restructures federal aid to community based mental health programs.

\* \* \* \*

Legislation now before Congress would block

unlimited public access to Professional Standards Review Organization (PSRO) documents.

The AMA has urged Congress as part of its 18-part package of PSRO changes to specify that PSROs are not federal agencies and therefore not subject to requirements of the Freedom of Information Law.

A Court of Appeals decision is pending on the issue in Washington, D. C.

The PSRO provision is part of the Medicare-Medicaid amendments measure approved by the House Commerce and Ways and Means Committees. Though it does not take the non-federal agency route of the AMA proposal, the amendment's procedures for court orders to obtain information would serve much the same effect.

Seven of 25 AMA-developed PSRO amendments were substantially adopted in the last Congress.

The 18 amendments pending would authorize organizations, including foundations, designated by Medical Societies to be specifically eligible for consideration as PSROs; and authorizing of physician polling on agreements between PSROs and the government. Many current provisions relating to PSRO operations would be deleted or modified under the AMA proposals.

\* \* \* \*

Chiropractic students would be eligible for the first time for Federal Health Manpower loans under legislation approved by the Senate Human Resources Committee.

The provision, by Committee Chairman Harrison Williams (D-NJ), was part of the Health Professions Education Assistance bill sent to the Senate Floor. The AMA and allied health groups protested that the Committee should have deferred the issue pending hearing and testimony. The provision does not make schools of Chiropractic eligible for federal support. The Committee called on the government to study the safety and efficacy of Chiropractic.

The overall Manpower Bill approved by the Committee sharply restricts federal capitation aid for medical schools. However, it is less sweeping than a three-year phase-down adopted by the House Commerce Committee.

Complications arising out of budget deadlines may result in Congress approving a one-year continuing resolution of aid for medical schools at their current level for the fiscal year starting in October, with other provisions of the congress-

sional legislation taking effect after that date.

A House-Senate Conference may be required to settle the differences between the House and Senate bills on Chiropractic, capitation and many other issues.

\* \* \* \*

The AMA has challenged proposed regulations to revise utilization review procedures for Medicare and Medicaid.

In a statement to the Health Care Financing Administration (HCFA), the AMA said "the overall effect of the proposed regulations does not meet the basic criteria for an appropriate program in providing necessary flexibility and fulfilling the intent of Congress."

HCFA was told that certain provisions lack operational flexibility, and that specific standards relating to preadmission and concurrent review, as well as those relating to prior approval of elective surgery and other procedures, go beyond the authority established in the Social Security Act.

The definition of "major diagnostic or therapeutic procedure" is "unacceptably broad," according to the AMA.

The sweeping authority to allow UR committees to disapprove elective surgery or other major elective diagnostic or therapeutic procedures is inconsistent with the Social Security Act which provides that the government shall not interfere with the practice of medicine, said the AMA.

\* \* \* \*

President Carter has signed into law legislation providing higher pay for military physicians. The measure allows bonuses of \$9,000 - \$10,000 to physicians in the military as well as variable special pay depending on years of service, payment for board certification and incentive special pay for critical specialties. The extra pay could total up to \$33,000 on top of regular pay. A discretionary special pay provision for Public Health Service physicians was included in the measure. President Carter had vetoed an earlier military pay bill because of provisions for non-military physicians and non-physicians. The measure was backed by the American Medical Association.

\* \* \* \*

The active ingredient in marijuana, called THC, may be okayed by the Food and Drug Administration this fall for restricted distribution use by cancer patients in order to reduce nausea caused by chemotherapy.

An FDA advisory panel voted five to four to make the synthetic product available at cancer treatment centers and medical school hospitals.

The AMA told the FDA that research on use of THC as an antiemetic should be pursued in broader clinical trials. "It appears that the effectiveness data accumulated to date warrants more widespread use of THC for this single purpose in selected patients," wrote James Sammons, M.D., AMA Executive Vice President.

The AMA commended the coordinated efforts at the federal level "to bring to practitioners and patients some hope of relief from the mentally and physically debilitating side effects of cancer chemotherapy."

Although the advisory committee action was a boost for patient groups seeking marijuana, some argued that the synthetic product involved is much less efficacious than the natural product.

\* \* \* \*

The Supreme Court decision on Medicaid abortion funding may have an impact on federal policies toward all beneficiaries.

In effect, the high Court said Congress has the right to impose restrictions on benefits that might be available to the general public.

By a 5-4 vote, the Justices upheld Congress' restrictions on Medicaid abortions, limiting federal payment to abortions needed to save the lives of mothers or in cases of rape or incest.

The so-called Hyde Amendment, after Rep. Henry Hyde (R-IL), has plunged Congress into annual debate for four years, with the Amendment forces winning out each time. As a result of the Hyde Amendment, Medicaid-funded abortions have dropped from 300,000 before 1976 to less than 2,000 last year.

Pro-abortion and anti-abortion forces have collided bitterly on the issue and opportuned Congress unceasingly. More congressional mail has been generated on abortion than on any other subject.

The Court's ruling came as the Health and Human Services Department was studying what constitutes "reasonable and necessary" medical services that Medicare and Medicaid should finance. Another federal study involves heart transplantation and how and whether Medicare patients should be reimbursed for the procedure.

Supreme Court Justice Potter Stewart, writing for the majority, said that "although Congress has opted to subsidize medically necessary abor-



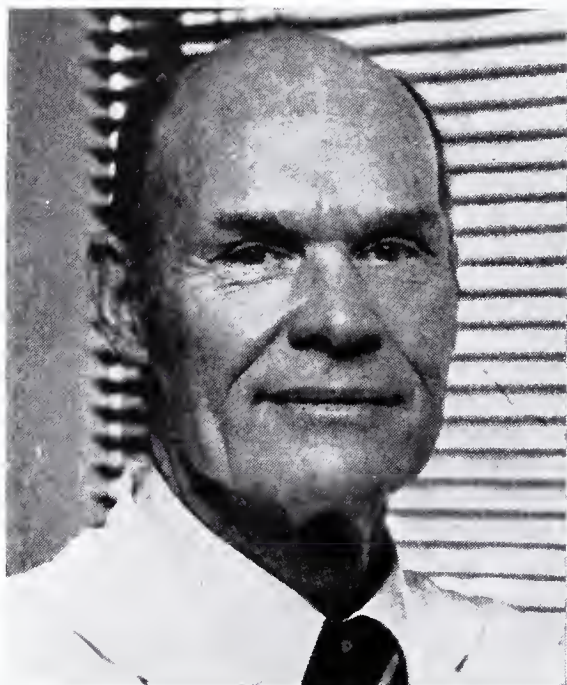
tions, the fact remains that the Hyde Amendment leaves an indigent woman with at least the same range of choice in deciding whether to obtain a medically necessary abortion as she would have had if Congress had chosen to subsidize no health care at all.

"We are thus not persuaded that the Hyde

Amendment impinges on the constitutionally protected freedom of choice recognized in (a prior Court ruling)."

In a second 5-4 vote, the Court said states are not obligated to pay for medically necessary abortions for which federal reimbursement is not available.

## Medicine/Religion Symposium



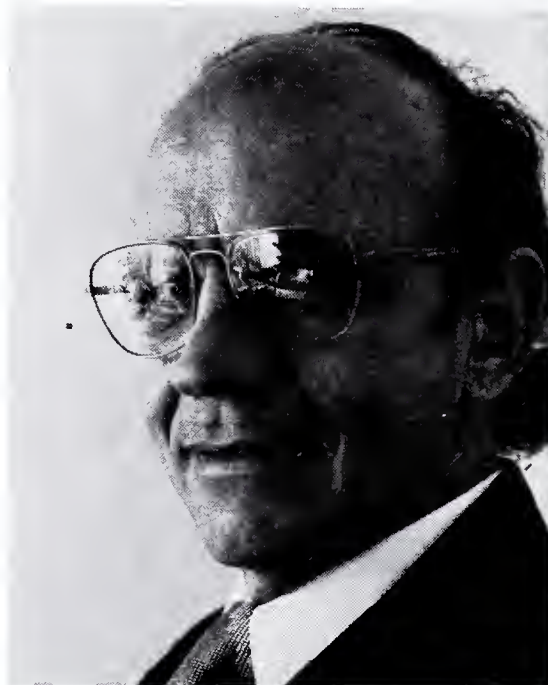
Joseph V. Fisher, M.D.  
Charleston, South Carolina

LITTLE ROCK — "Religious/ethical foundations upon which correct medical decisions can be made" will be the topic of the third Annual Medicine/Religion Symposium to be conducted Saturday, December 6, at the University of Arkansas Medical Sciences Campus at Little Rock. Dr. Fred O. Henker III, professor of Psychiatry at UAMSC is the program's director.

Dr. Henker said that keynote presentations for the symposium will be delivered by two guest lecturers who are outstanding in the field of medical ethics and pastoral counseling.

"The Religious Basis for Decisions" will be presented by the Rev. C. Kenneth Pepper, Ph.D., founder and director of the Pastoral Counseling Center of the Greater Dallas area, Texas. Dr. Pepper is considered a pioneer in the field of religion and mental health, and is considered an expert interpreter of the church to the medical community. He is a diplomate in the American Association for Clinical Pastoral Education.

Dr. Joseph V. Fisher will discuss "Critical



Reverend Kenneth Pepper, Ph.D.  
Dallas, Texas

Medical Decisions." Dr. Fisher is professor and vice-chairman of the Department of Family Medicine at the Medical University of South Carolina at Charleston. He is also a professor of Psychiatry and Behavioral Sciences and has special interest in psychosomasis and alcoholism.

The symposium's format is centered around group discussions and responses to case presentations and physicians are encouraged to invite their clergymen to attend the symposium. "Dialogue between physicians and clergymen regarding basic professional ethics will help enable participants to make realistic decisions at times of medical crisis," Dr. Henker explained.

Tuition for the Medicine/Religion Symposium is \$15, including lunch.

As an institution accredited for continuing medical education, UAMSC has announced that this symposium meets the criteria for seven (7) credit hours in Category I of the Physician's Recognition Award of the AMA. The program is also acceptable for seven (7) prescribed hours by

the American Academy of Family Physicians.

A block of rooms has been reserved at the Americana Inn of Little Rock for participants requiring overnight accommodations. Special "convention rates" will be available.

\* \* \* \*

# AMERICAN COLLEGE OF INTERNATIONAL PHYSICIANS, INC., MEMBERSHIP

In 1975 the ACIP was organized for physicians licensed and practicing in the United States, whether educated abroad or in the United States. It is a participatory fellowship open to all physi-

cians who wish to join their colleagues from many nations who endeavor to shape policies for medical education, research, ethics, and international health activities for the future of medicine around the world.

The College provides a forum for discussion of issues of interest to international physicians and international medicine.

For further information about Fellowship in the College and/or application forms, contact the College office at 3030 Lake Avenue, Fort Wayne, Indiana; phone (219) 424-7414.



## keeping up

## Category 1 Continuing Medical Education Programs Available in Arkansas

### SMALL COMPUTERS IN THE PHYSICIAN'S OFFICE

Presented by Gloria Lane, M.S., and Howard Barnhard, M.D., *November 1, 1980, 8:30 a.m. to 4:00 p.m.*, UAMSC Education II Building, Room G-137. Six hours Category I credit. Registration fee: \$35.00.

### ENDOCRINE TREATMENT OF INFERTILITY/ ENDOCRINOLOGY OF SEXUAL BEHAVIOR

Presented by Ewa Radwanska, M.D., "Endocrinology of Sexual Behavior," *November 7, 8:00 p.m.*; "Endocrine Treatment of Infertility," *November 8, 8:00 a.m. to 5:30 p.m.*, Camelot Inn, Little Rock. Hours of Category I credit: one hour November 7; eight hours November 8. Registration fee: \$75, \$20 for optional dinner on November 7. Sponsored by UAMS.

### ADVANCED CARDIAC LIFE SUPPORT — PROVIDER'S COURSE

Presented by Noel Lawson, M.D., *November 7th through 9th, 1980, 7:30 a.m. to 6:00 p.m.*, UAMSC Education II Building. Twenty hours Category I credit.

### HEAD AND NECK RADIOLOGY

Presented by Eugene Binet, M.D., *November 8, 11:30 a.m. to 5:00 p.m.*, and *November 9, 8:00 a.m. to 4:00 p.m.*, Little Rock Hilton Inn. Nine and one-half hours Category I credit. Sponsored by UAMS.

### BEYOND THE BASICS: AN ADVANCED PROGRAM IN INFECTION CONTROL

Presented by Terry Yamauchi, M.D., *November 20, 7:45 to 5:00 p.m.*, and *November 21, 8:00 a.m. to 4:00 p.m.*, Camelot Inn, Little Rock. Ten hours Category I credit. Registration fee: \$50. Sponsored by UAMS.

### NUCLEAR MEDICINE SYMPOSIUM ON GASTROENTEROLOGY

Presented by W. Turner Harris, M.D., and Jerry L. Prather, M.D., *December 6, 1980, 8:30 a.m. to 4:00 p.m.*, Education Building, Room E155, St. Vincent Infirmary. Six hours Category I credit. Registration fee: \$25 includes continental breakfast and lunch.

As organizations accredited for continuing medical education by the Liaison Committee on Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.



**ETHICAL BASIS FOR MEDICAL DECISIONS**

Pre-ented by Fred O. Henker, M.D., *December 6, 8:30 a.m. to 5:00 p.m.*, UAMSC Education II

Building, Room G141. Seven hours Category I credit. Registration fee: \$15.

**RECURRING EDUCATION PROGRAMS**

Unless otherwise indicated, programs are for one to one and one-half hours Category I credit.

**FAYETTEVILLE — AHEC-NW**

*Medical Teaching Conference*, each Saturday, 7:30 a.m., Washington Regional Medical Center.

**FAYETTEVILLE — VA MEDICAL CENTER**

*Radiology Conference*, November 6th and 20th and December 4th and 18th, 1:00 p.m., Conference Room.

*Pathology Conference*, November 18th, 3:00 p.m., and December 9th, 1:30 p.m., Conference Room.

*Mortality Conference*, November 13th and December 11th, 3:00 p.m., Conference Room.

**FORT SMITH — AHEC**

*Tumor Conference*, every Tuesday, 12:00 noon. Fourth Floor Conference Room. Sparks Regional Medical Center.

**JONESBORO — ST. BERNARD'S REGIONAL MEDICAL CENTER**

*Interesting Cases*, second and fourth Tuesday, 12:00 noon, Dietary Conference Room. Sponsored by AHEC-NE.

*Tumor Conference*, third Tuesday, 12:00 noon, Dietary Conference Room. Sponsored by AHEC-NE.

*Medical Lecture Series*, each Friday except third Friday, 11:50 p.m., Dietary Conference Room. Sponsored by AHEC-NE.

*Chest Conference*, third Friday, 11:50 a.m., Dietary Conference Room. Sponsored by AHEC-NE.

**LITTLE ROCK — BAPTIST MEDICAL CENTER**

*Pulmonary Care Conference*, each Tuesday, 12:00 noon to 1:00 p.m., Dining Room #4.

*Central Arkansas Primary Care Conference*, second Tuesday, 7:00 p.m. to 9:00 p.m., Auditorium. Two hours Category I credit.

*Cardiopulmonary Resuscitation Course*, second Wednesday, 6:00 p.m. to midnight, Human Resource Development Area. Six hours Category I credit.

*Emergency Medicine Conference*, second and fourth Wednesday, 12:30 p.m. to 1:30 p.m., Conference Room #1.

*Morbidity and Mortality Conference*, first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.

*Surgery Conference*, second and third Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.

**LITTLE ROCK — ST. VINCENT INFIRMARY**

*Interhospital GI Problems Conference*, first Monday, 6:00 p.m. to 7:30 p.m., Room E155, Education Wing.

*Pediatric Conference*, first and third Monday, 12:30 p.m. to 1:30 p.m., Room E159, Education Wing.

*Interhospital Urology Grand Rounds*, first Tuesday, 5:30 p.m. to 6:30 p.m., Room E159, Education Wing.

*Peripheral Vascular Disease Conference*, third Tuesday, 6:00 p.m. to 7:00 p.m., Room E159, Education Wing.

*Neuropathology Conference*, third Tuesday, 5:00 p.m. to 6:00 p.m., Room S1169, Laboratory.

*Pulmonary Conference*, first and third Thursday, 12:00 noon to 1:00 p.m., Room E159, Education Wing.

*Cardiology Conference*, second and fourth Thursday, 12:00 noon to 1:00 p.m., Room E159, Education Wing.

*Cleft Palate Conference*, November 19, 1980, 12:30 p.m. to 1:30 p.m., Room E159, Education Wing.

**LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES**

*Internal Medicine Grand Rounds*, each Tuesday, 8:00 a.m. to 9:00 a.m., Education I Auditorium.

*Neuroradiology Conference*, each Wednesday, 4:00 p.m. to 5:00 p.m., Department of Radiology Conference Room.

*Radiology Continuing Education Lecture Series*, two Wednesdays each month, 6:00 p.m. to 7:30 p.m., Department of Radiology Conference Room.

*Categorical Course in Radiology*, each weekday except Wednesday, 4:15 p.m. to 5:00 p.m.; Wednesday, 5:00 p.m. to 5:45 p.m., Department of Radiology.

**PINE BLUFF — AHEC-SW**

*Medical Lecture Series*, fourth Tuesday each month, 6:30 p.m. to 9:00 p.m., dinner meeting at local restaurant.





## PERSONAL AND NEWS ITEMS

### EMERGENCY SERVICES

Dr. R. Stephen Venable, a 1977 graduate of the University of Arkansas College of Medicine, has joined the University Hospital as director of emergency services. Dr. Venable has also joined the staff of the College of Medicine as assistant professor of internal medicine and family and community medicine.

### OZARK RECEPTION

The Ozark Area Chamber of Commerce sponsored a reception for three new physicians locating there. The physicians are: Dr. Rob Jeffers and Dr. Tom Jefferson who both specialize in Pediatrics and Dr. Tina Jefferson who specializes in Internal Medicine.

### BULLET-PROOF VESTS

Staff physicians at Memorial Hospital in North Little Rock contributed funds to complete a drive to finance purchase of bullet-proof vests for North Little Rock police field officers. Drs. Ernest H. Harper, chief of staff, and David Bevans, Jr., chief of surgery, announced the staff's contribution.

### PHYSICIANS' SEMINAR

Dr. James R. McNair of Little Rock recently spoke on "Preventive Medicine and Wellness" at a seminar in North Little Rock for physicians.

### DOCTOR COSTALDI

Dr. Mario Costaldi has joined Drs. Richard Pearson and James Bledsoe of Rogers in the practice of General and Vascular Surgery. Dr. Costaldi was previously associated with the Rogers Medical Center.

### LAWRENCE MEMORIAL HOSPITAL MEDICAL STAFF

Dr. Stephen Wilson, formerly of Johnson City, Tennessee, has joined the medical staff of the Lawrence Memorial Hospital in Walnut Ridge.

Dr. Joe Hughes has been elected vice president and Dr. Sebastian Spades has been elected secretary-treasurer of the medical staff of the hospital for the 1981 fiscal year.

### DR. SMITH HONORED

Dr. Robert Smith of Pine Bluff was recently honored by the National Alumni Association of Meharry Medical College in Nashville, Tennessee, for his twenty-five years of service in medicine.

### DR. VASUDAVAN SPEAKS

Dr. P. Vasudavan of Helena spoke at the September meeting of the Memphis Chapter of Certified Surgical Technologists.

### DR. PETIT LOCATES IN WEST MEMPHIS

Dr. Paul N. Petit has joined Drs. John M. Hodges and Terry P. Templeton in the practice of Otolaryngology at West Memphis.

### DOCTOR JOINS HOSPITAL STAFF

The Eureka Springs Municipal Hospital has announced that Dr. William Diacon has joined its medical staff. Dr. Diacon is a diagnostic radiologist.

### BENTONVILLE PHYSICIAN

Dr. Mark H. Bowles has opened an office in Bentonville for the practice of Internal Medicine and Gastroenterology.

### HISTORICAL SOCIETY

Dr. G. Allen Robinson of Harrison recently spoke at a Carroll County Historical Society meeting. The subject of Dr. Robinson's talk was "Farm Museum and Heritage Center."

### DR. WEBB LOCATES

Dr. Dan Webb has joined Dr. Chester Peeples in the practice of Internal Medicine in West Memphis.

### SEARCY PHYSICIAN

Dr. Larry W. Weathers, a native of Salem, has opened an office in Searcy. Dr. Weathers' specialty is Internal Medicine and Cardiology.

### PHYSICIANS ANNOUNCE ASSOCIATION

Drs. Robert W. Lehmberg and Robert G. Vogel have announced that Dr. Raymond A. Wende is now associated with them for the practice of plastic and reconstructive surgery. Their office is located at 919 University Tower Building in Little Rock.

### PHYSICIAN LOCATES

Dr. Roger House has located in Gillett. Dr. House, a General Practitioner, will have his office in the New Hope Health Center.

### COUNTY SOCIETY MEETING

Dr. John Giller, Jr., of El Dorado spoke at a recent meeting of the Crittenden County Medical Society and its auxiliary. Dr. Giller spoke on the property tax provisions in the proposed State Constitution.



#### **SEARCY SURGEON**

Dr. Glen Blue has joined Drs. Porter Rodgers, Jr., and James Simpson for the practice of General Surgery in Searcy.

#### **DR. THOMAS LEWELLEN**

Dr. Thomas L. Lewellen has announced he will open an office for the practice of medicine in the Freeland Building in Star City.

#### **LUPUS FOUNDATION**

The Northeast Arkansas Chapter of the Lupus Foundation of America, Inc., has been founded by Judy A. Henson, Post Office Box 607, Jonesboro 72401, phone 972-5344. Mrs. Henson requests that physicians advise their patients with Lupus of the existence of the Foundation and encourage the patients to contact her.



### **NEW MEMBERS**

#### **DR. WESLEY J. ASHABRANNER**

Dr. Wesley Ashabrunner has joined the Cleburne County Medical Society.

Dr. Ashabrunner attended Ouachita Baptist University and Hendrix State University. In 1979, he was graduated from the University of Arkansas College of Medicine. His internship was served at Washington Regional Medical Center in Fayetteville.

Dr. Ashabrunner served with the United States Army for seven and one-half years and with the Arkansas National Guard for five years.

Dr. Ashabrunner, a Family Physician, moved to Heber Springs in June. His office is located at 4th and Searcy.

#### **DR. WAYNE P. ENNS**

The Logan County Medical Society has added Dr. Wayne Enns to its membership roll.

Dr. Enns, a native of Steinbach, Manitoba, Canada, was graduated from the University of Manitoba in 1969 and from the University of Manitoba Faculty of Medicine, Winnipeg, in 1973. He served a year of Family Practice Residency at the same institution.

From 1974 to 1978, Dr. Enns served with the Canadian Armed Forces as General Duty Medical Officers in Oromocto, New Brunswick, and in

Baden Sollingen, West Germany. Before moving to Arkansas, he practiced with Velva Medical Center Division, Medical Arts Clinic in Velva, North Dakota.

Dr. Enns is board certified in Family Practice. His office is in the Paris Clinic located at 1812 East Walnut.

The Pulaski County Medical Society has added seven new members to its roll.

#### **DR. STANLEY K. BROWNING**

Dr. Stanley Browning was born in Conway. He is a graduate of the University of Arkansas at Fayetteville. He was graduated from the University of Arkansas College of Medicine in 1977.

After an internship at the University of Kentucky in Lexington, he served an Anesthesiology residency at the same institution from 1978 to 1980.

Dr. Browning is associated with Anesthesiology Group, P.A., at 1150 Medical Towers Building in Little Rock.

#### **DR. WILLIAM R. COLLIE, IV**

Dr. W. R. Collie is a native of Neosho, Missouri. He received his B.S. in 1970 from the University of Tulsa. In 1974, Dr. Collie was graduated from Tulane University School of Medicine in New Orleans.

Dr. Collie served his internship at the University of Arkansas College of Medicine. At the same institution, he served a residency in Pediatrics and was chief resident of Pediatrics from 1976 to 1977. In 1977, he was granted a Fellowship in Pediatric Genetics and Metabolism by the University of Texas at Houston.

A board certified Pediatrician, Dr. Collie's office for the practice of Pediatric Genetics is at 200 Doctors Building in Little Rock.

**DR. CHARLES H. CROCKER**

Dr. Charles Crocker, a native of Bruce, Mississippi, is a graduate of the University of Mississippi. In 1964, he was graduated by the Tulane University School of Medicine in New Orleans.

Dr. Crocker's internship was at Charity Hospital in New Orleans. From 1965 to 1969, he served a residency in General Surgery at City of Memphis Hospital. In 1973, he was certified by the American College of Surgeons.

From 1970 to 1979, Dr. Crocker practiced in Tupelo, Mississippi. In 1979, he entered a Colon and Rectal Surgery Fellowship at Georgia Baptist Hospital in Atlanta.

Dr. Crocker's office is at 500 South University, Little Rock. His specialty is Colon and Rectal Surgery.

**DR. JOE WALTER CROW**

Dr. Joe Crow, born in Detroit, Michigan, was graduated from Little Rock Central High School in 1956. In 1962, he was graduated from Little Rock University with a B.S. He was granted his medical degree by the University of Arkansas College of Medicine in 1966.

Dr. Crow's internship was served at David Grant USAF Hospital at Travis Air Force Base in California. From 1972 to 1976, he served an Orthopaedic Surgery residency at Mayo Clinic in Rochester, Minnesota. In 1978, he was certified by the American Board of Orthopaedic Surgery.

Dr. Crow is with Orthopaedic Associates, P.A., at 601 North University in Little Rock for the practice of Orthopaedic Surgery.

**DR. WILLIAM E. HARRISON**

Dr. William Harrison is a native of Helena, Arkansas.

Dr. Harrison is a graduate of Hendrix College and the University of Arkansas College of Medicine. His internship was at Grady Memorial Hospital in Atlanta, Georgia. In 1976, Dr. Harrison entered an Obstetrical-Gynecological residency at the University of Arkansas Medical Center.

Dr. Harrison began practice in Obstetrics and Gynecology in July. His office is in Suite 711, 500 South University, Little Rock.

**DR. JERRY PANUSKA**

Dr. Jerry Panuska is a native of Czechoslovakia. He is a 1972 graduate of Henderson State Teachers College in Arkadelphia. The University of Arkansas College of Medicine granted Dr. Panuska

his medical degree in 1976.

Dr. Panuska served his internship at the University of Arkansas College of Medicine and from 1977 to 1979 served a residency in Anesthesiology at the same institution. From 1979 to 1980, he served a residency in Critical Care Medicine at the University of Kentucky in Lexington. While at the University of Kentucky, Dr. Panuska was an instructor in the Department of Anesthesiology.

Dr. Panuska has his office at 1150 Medical Towers Building and is on the staff of Baptist Medical Center in Little Rock. His specialty is Anesthesiology.

**DR. ROBERT W. YOUNG**

Dr. Robert W. Young was born in Tuscaloosa, Alabama.

Dr. Young is a graduate of the University of Kentucky in Lexington. He received his M.D. degree from the University of Kentucky College of Medicine in 1973. Dr. Young served residencies in Pediatrics at the University of Miami School of Medicine and the University of Kentucky College of Medicine. In 1978, Dr. Young was granted a Master of Public Health degree by the University of Michigan School of Public Health. He is a diplomate of the American Board of Family Practice.

Dr. Young was an associate clinical professor of community medicine at West Virginia University College of Medicine. He is currently an associate clinical professor in family and community medicine at the University of Arkansas College of Medicine.

Dr. Young is director of the Arkansas Department of Health. His office is at 4815 West Markham in Little Rock.

**DR. CAROLE B. KELLER**

Pulaski County Medical Society has accepted Dr. Carole Keller as a courtesy member. Dr. Keller is a resident in Pathology at the University of Arkansas College of Medicine.

The Saline County Medical Society has added two new members to its roll.

**DR. DAVID L. CALDWELL**

Dr. David Caldwell, a native of Memphis, Tennessee, is a 1970 graduate of the University of Arkansas. In 1974, he was graduated from the University of Tennessee College of Medicine, Memphis.

From 1974 to 1980, Dr. Caldwell served in the United States Army. He served his internship



and residency at Brooke Army Medical Center. During his active military duty, he was also on the medical staff at Fort Campbell, Kentucky.

Dr. Caldwell's specialty is Obstetrics-Gynecology. His office is located at 910 North East Street, Benton.

**DR. BILL R. THOMAS**

A native of Little Rock, Dr. Billie R. Thomas was graduated from the University of Arkansas at Little Rock in 1968 with a B.S. in chemistry. He did one and one-half years of graduate work in Biochemistry at the University of Arkansas for Medical Sciences. In 1977, Dr. Thomas was granted his medical degree by the University of Arkansas College of Medicine. After serving an internship at the same institution, he was a resident in Internal Medicine from 1978 to 1980.

Dr. Thomas' specialty is Internal Medicine. His office is located at 111 McNeil in Benton.

**DR. WILLIAM K. WEBB**

Dr. William K. Webb is a new member of the Sebastian County Medical Society. He was born in Memphis, Tennessee.

In 1970, Dr. Webb received his B.S. from Mississippi College. In 1973, he was granted his medical degree by the University of Tennessee College of Medicine. His internship was served at the City of Memphis Hospital. At the same institution, Dr. Webb served an Internal Medicine Residency and a Pulmonary Disease Fellowship. He was an instructor with the Department of Medicine at the University of Tennessee College of Medicine. He is board certified by the American Board of Internal Medicine.

Before moving to Fort Smith earlier this year, Dr. Webb had practiced in Memphis. He is now associated with Cooper Clinic in Fort Smith for the practice of Internal Medicine and Pulmonary Disease.



**O B I T U A R Y**

**DR. WILLIAM B. HODGES**

Dr. William B. Hodges of North Little Rock died August 23, 1980. He was born May 9, 1941, in Memphis.

Dr. Hodges was a graduate of Arkansas State College and the University of Tennessee College of Medicine. He was class president at medical school. He was a member of Alpha Omega Alpha, Phi Chi, Pi Kappa Alpha, Phi Eta Sigma, and the Twin Cities Toastmasters Club. He was a deacon at the Levy Church of Christ.

Dr. Hodges practiced for two years in West Memphis. He had practiced in North Little Rock since 1970. He was a member of the American Academy of Family Physicians.

Dr. Hodges is survived by his wife, Ann Voss Hodges, and four sons.

**DR. WILLIAM D. SMITH**

Dr. William D. Smith of Texarkana died August 10, 1980. He was born July 13, 1900.

Dr. Smith was graduated in 1925 from the University of Arkansas College of Medicine. He had

been a member of the staff at St. Michael Hospital in Texarkana for forty-seven years and was associated with the J. K. Smith Clinic founded by his father, the late Dr. J. K. Smith. In 1973, Dr. Smith retired from active practice.

Dr. Smith is survived by his wife, Lucille M. Smith, of Texarkana and two sons. His brother, Dr. Charles Smith, resides in Texarkana.

**THINGS**



**TO  
COME**

**October 21**

*The First Annual John Rock, M.D., Commemorative Symposium.* The University of Pennsylvania School of Medicine, Department of Obstetrics and Gynecology, Philadelphia 19104. Theme: contraceptives. Dunlop Auditorium, Medical Education Building, 36th and Hamilton Walk. No registration fee; however, pre-registration is required.

**October 22-25**

*Present Concepts in Obstetrics and Gynecology.*

Second annual post-graduate course, University of Pennsylvania School of Medicine. Dunlop Auditorium-Medical Education Building, 36th and Hamilton Walk, Philadelphia. Fee for practicing physicians is \$300 for full course (4 days) or \$100 per day. 28 credit hours of Category I of the Physician's Recognition Award of the AMA; 28 cognates, Formal Learning, by the American College of Obstetricians and Gynecologists; 28 Prescribed Hours by the American Academy of Family Physicians. For further information, contact the Department of Obstetrics and Gynecology, University of Pennsylvania School of Medicine, Philadelphia 19104.

#### **October 30-31**

*Psychotropic Drugs: One Man's Medicine, Another Man's Poison.* Baptist Memorial Hospital, Memphis, Tennessee. Credited for 15 hours, Category I. For additional information, call toll free (outside Tennessee) 1-800-238-6839 and ask for Educational Support Services, continuing Medical Education.

#### **October 30-November 1**

*Update in Neurology.* Southwestern Medical School, The University of Texas Health Science Center at Dallas. Fee \$200 for practicing physician; \$100 for resident physician. Contact: Division of Continuing Education, The University of Texas Health Science Center at Dallas, 5323 Harry Hines Boulevard, Dallas 75235; phone (214) 688-2166.

#### **November 19**

*The Neurologic Red Eye.* The Texas Neurological Institute at Dallas and Departments of Ophthalmology and Neurology, The University of Texas Health Science Center at Dallas. Marriott Inn—Dallas North, LBJ Freeway at Coit Road, Dallas, Texas 75251; phone (214) 688-2166.

#### **November 21-23**

*Mini-residency in Ophthalmic Genetics.* Department of Medical Genetics, University of South Alabama College of Medicine. Grand Hotel, Point Clear, Alabama. For further information, contact: Dr. Wladimir Wertelecki, Professor and Chairman, Department of Medical Genetics, 2451 Fillingim Street, Mobile, Alabama 36617; telephone (205) 473-0311, extension 473.

#### **December 6**

Third annual Medicine and Religion Symposium co-sponsored by the Arkansas Medical

Society and the University of Arkansas College of Medicine at the U.A.M.S.C. "Religious/Ethical Foundations Upon Which Correct Medical Decisions Can Be Made." Program director, Dr. Fred O. Henker, III, chairman, Medicine and Religion Committee, Arkansas Medical Society, and Professor of Psychiatry at the College of Medicine. Tuition is \$15 which includes lunch. Accredited for seven (7) credit hours in Category I of the Physician's Recognition Award of the AMA. Program is acceptable for seven (7) prescribed hours by the American Academy of Family Physicians. For further information, contact Dr. Fred Henker at the University of Arkansas College of Medicine, Department of Psychiatry.

#### **December 12-13**

*Third annual course on strabismus.* The University of Mississippi Medical Center. No registration fee. For information, write Dr. Raul E. Valenzuela, University of Mississippi Medical Center, 2500 North State Street, Jackson 39216.

#### **American Heart Association**

The American Heart Association has announced meetings listed below. For further information, contact Neal Moore, Public Relations Director, American Heart Association—Arkansas Affiliate, 909 West Second, Post Office Box 1610, Little Rock 72203; phone (501) 375-9148.

#### **November 17-19**

Council on Arteriosclerosis and the American Society for the Study of Arteriosclerosis' 34th Annual Meeting, Miami Beach Convention Center, Florida.

#### **November 17-20**

32nd Annual Assembly, Fountainbleau Hilton Hotel, Miami, Florida.

#### **November 17-20**

53rd Scientific Sessions, Miami Beach Convention Center, Florida.

#### **November 17-20**

44th National Conference on Thrombosis and Hemostasis, Miami Beach Convention Center, Florida.

#### **December 4-6**

Council on Clinical Cardiology. "The Athlete: Risks of Injury and Sudden Death, Preventive and Therapeutic Considerations". Grand Hyatt Hotel, New York City.

#### **February 12-14, 1981**

6th International Joint Conference on Stroke



and Cerebral Circulation. Century Plaza Hotel, Los Angeles, California.

**1981**

**February 5-7, 1981**

Surgical Update 1981. The Department of Surgery, The University of Texas Health Science Center, Dallas, Texas. The Plaza of the Americas Hotel, Dallas. Accredited for 18 credit hours in Category I of the Physician's Recognition Award of the AMA. Acceptable for 18 Prescribed hours by the American Academy of Family Physicians.

For further information, contact Division of Continuing Education, The University of Texas Health Science Center, 5323 Harry Hines Boulevard, Dallas 75235, or phone (214) 688-3531.

**March 2-6, 1981**

*Seventieth Annual Meeting of the United States-Canadian Division of the International Academy of Pathology.* Palmer House, Chicago,

Illinois. Further information about the meeting and courses offered may be obtained from Dr. Nathan Kaufman, Secretary-Treasurer, United States-Canadian Division of the International Academy of Pathology, 1003 Chafee Avenue, Augusta, Georgia 30904, phone (404) 724-2973.

**March 19-21**

*First Annual Pediatric Infectious Disease Seminar.* Sponsored by Department of Pediatrics, The University of Texas Health Science Center at Dallas. Las Vegas Hilton Hotel, Las Vegas. 15 credit hours, Category I for AMA and 15 prescribed hours by AAFP. Fee: \$225 for registrations received by December 15, 1980; \$275 for registrations received after that date. For further information, contact Raymond W. Sarber, Executive Secretary, 2212 Great Falls Road, Falls Church, Virginia 22046, phone (703) 536-7023.



November, 1980

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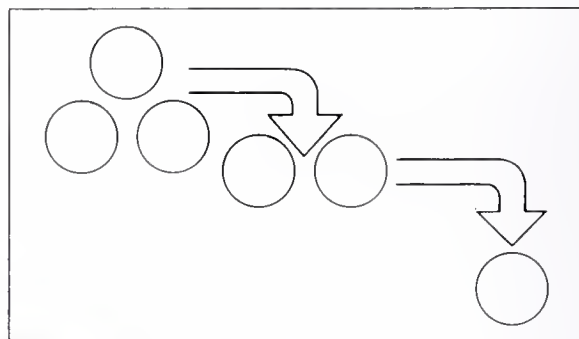
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\*Sellers EM: *Drug Metab Rev* 8(1):5-11, 1978



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**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed, drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed or with latent depression or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported. Should these occur, discontinue drug. Isolated reports of neutropenia, jaundice, periodic blood counts and liver function tests advisable during long-term therapy

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NEWS—Our readers are requested to send in items of news, also marked copies of newspapers containing matter of interest to the membership.

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## Deformities of the Chest Wall

E. S. Golladay, M.D.\*

Failure of sternal fusion, Poland's syndrome, thoracic dystrophy, pectus excavatum, and pectus carinatum are deformities of the chest wall which may affect children.

### FAILURE OF STERNAL FUSION

There are three fundamentally important subdivisions of failure of sternal fusion; sternal fusion without associated anomalies, true ectopia cordis, and Cantrell's pentology. The sternum embryologically begins as bilateral bars of condensed mesoderm in the area of the axilla. The sternal bars then move forward to the midline and begin in the midline by approximately the eighth week.

Isolated failure of sternal fusion is a rare anomaly. There have been 43 previous cases of surgical correction.<sup>1</sup> Failure of sternal fusion is best handled at an early age where there is greater flexibility in the chest wall. A three-month-old child recently received operative correction of this defect. Figure 1a shows this three-month-old child with an obvious defect of the sternum secondary to a major failure of fusion. Figure 1b shows the same

child at age ten months after operative correction of her defect. Figure 2a shows the initial step in operative repair in which notches were made in the sternal bars bilaterally. Figure 2b shows the sternum wired together as well as the strap muscles of the neck and the sternocleidomastoid.

A lower sternal defect in association with the midline and supraumbilical abdominal wall defects, deficiency of the anterior diaphragm, defect in the diaphragmatic pericardium, an intracardiac defect, (usually a VSD, tetralogy of Fallot or a left ventricular diverticulum) has been termed Cantrell's pentology.<sup>2</sup> This has been handled in staged repairs or as a single repair. If there is a



Figure 1a.  
Three-month-old infant with failure of sternal fusion.



Figure 1b.  
The same child as in Figure 1a at age ten months, six months after operative correction.

\*Department of Surgery, Arkansas Children's Hospital and the University of Arkansas for Medical Sciences, Little Rock, Arkansas. Address reprint requests to: E. S. Golladay, M.D., Arkansas Children's Hospital, 804 Wolfe Street, Little Rock, Arkansas 72201.



significant omphalocele this has priority in operative intervention. Successful one-stage correction of all the malformations has been reported on three occasions.

There have been 17 cases of ectopia cordis reported. The operative correction has been unsuccessful except in one case. With true ectopia cordis, it has previously been impossible to cover the heart because of cardio-respiratory difficulties. A recent successful staged closure was managed by Dr. Doyme Williams of the University of Arkansas for Medical Sciences.

Pectus excavatum, or funnel chest, has an incidence of about eight per thousand and a male to female ratio of two to one. There are certainly familial instances but most patients appear to represent sporadic cases. The deformity also occurs in many of the collagen formation disorders such as Marfan's Syndrome. The deformity is usually central and below the level of the nipples. If asymmetry is present, there is almost invariably a rotation of the sternum toward the right so that the right side of the chest is more sunken than the left. Mammary asymmetry is a common accompaniment in girls and again, the right breast is the smaller. Many of these children have a characteristic asthenic appearance with a small

flat chest, a pot belly, and poor posture characterized by anteriorly displaced rounded shoulders. Flaring of the lower ribs is also common. They undergo marked psychological changes with a shy retiring aspect and refuse to undress in front of other children. Roentgenogram of the chest demonstrates displacement of the heart into the left chest and on the lateral film, the sternal depression in cases is deeper than is apparent on external physical examination. There are no proven theories of etiology but many believe that the deformity is secondary to abnormally long costo-chondral cartilages.

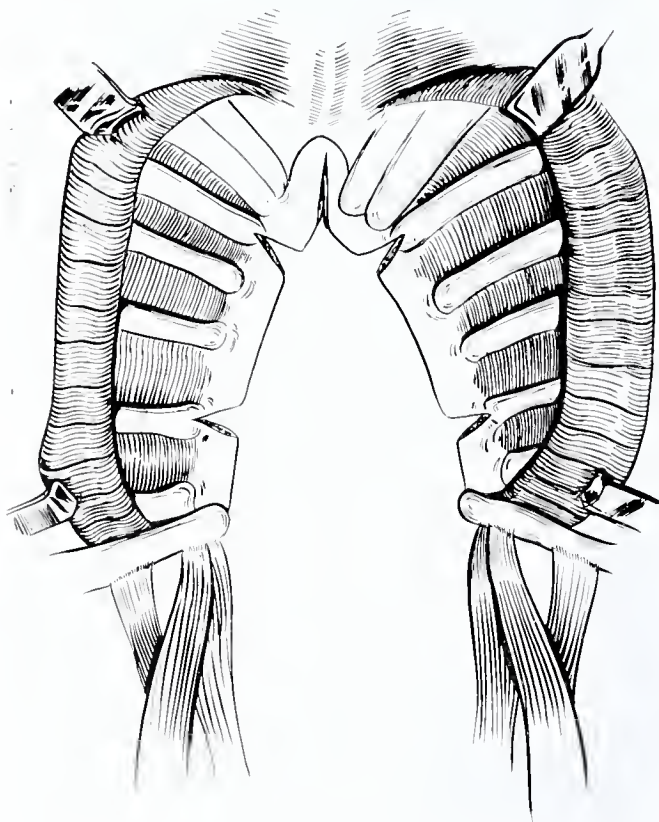


Figure 2a.

Operative correction of failure of sternal fusion. The sternum has been dissected free and notched.

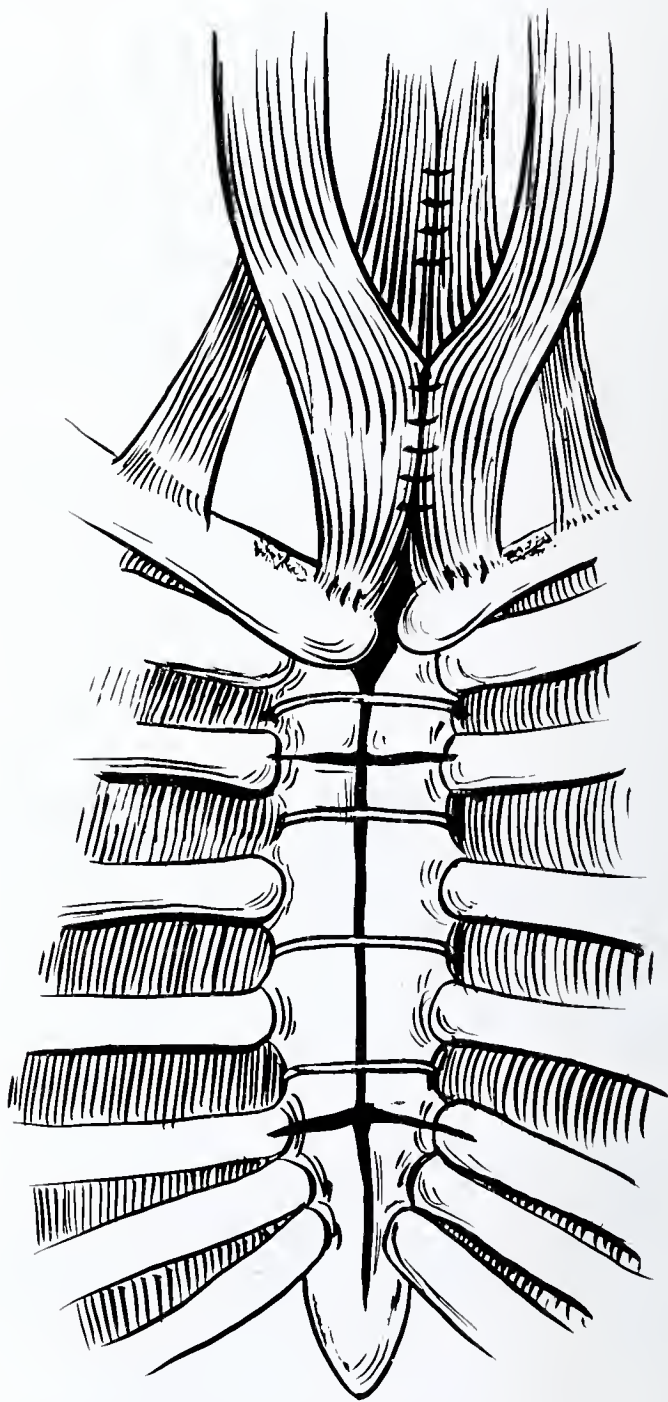


Figure 2b.

Operative correction of sternal fusion. Approximation of the notched sternum sternohyoid, sternohyoid and lower sternocleidomastoid in the midline.

Although the literature is replete with anecdotal reports of symptomatology from both heart and lungs, hard objective evidence of physiologic derangement has only recently been found. Although electrocardiographic changes have been common in the past, these have now been ascribed to malposition rather than malfunction. Many early studies of cardiopulmonary function did not show a decrease before operation nor an increase after operation for pectus excavatum.<sup>3</sup> Recently, however, Beiser and colleagues measured the response to modest and intense upright treadmill exercise before and after operation in six patients showed normal at rest cardiac catheterization data.<sup>4</sup> The cardiac index before operation was decreased in the upright exercise evaluation and more importantly, increased after operation by an average of 38 percent.

Although many operations have been devised, most involve resection of the abnormal cartilages and splints or stents. The operation used at Chil-

dren's Hospital is a variant initially devised by Ravitch in 1949.<sup>5</sup> For best cosmesis a transverse skin incision is used and the pectoralis muscles are elevated from the costal cartilages. The deformed cartilages are excised subperichondrally, an anterior cuneiform osteotomy is performed, and the lowest normal cartilage is obliquely transected and supported on the lateral partner to give the ultimate internal dynamic tripod fixation. This negates the need for metal splints which migrate and also require a second opera-



Figure 3a.

Twelve-year-old girl with a severe pectus deformity with marked angulation of the sternum at the right.



Figures 3b and 3c.

Frontal and lateral photograph at three weeks postoperative.



tion for removal. The timing of operation is best at age four to five years. At this age, the child can understand the operation and postoperative restrictions and yet not undergo the stresses of separation of the family which occur in the younger hospitalized child. The child is restricted from vigorous activity for six weeks. The repair is then complete before peer pressure in school is applied and also allows near maximal remodeling of the postural deformities.

Pectus carinatum or pigeon breast has many of the same demographics as does pectus excavatum in that it occurs familiarly, occurs more often in males, and indeed occurs in families in which other members have pectus excavatum (see

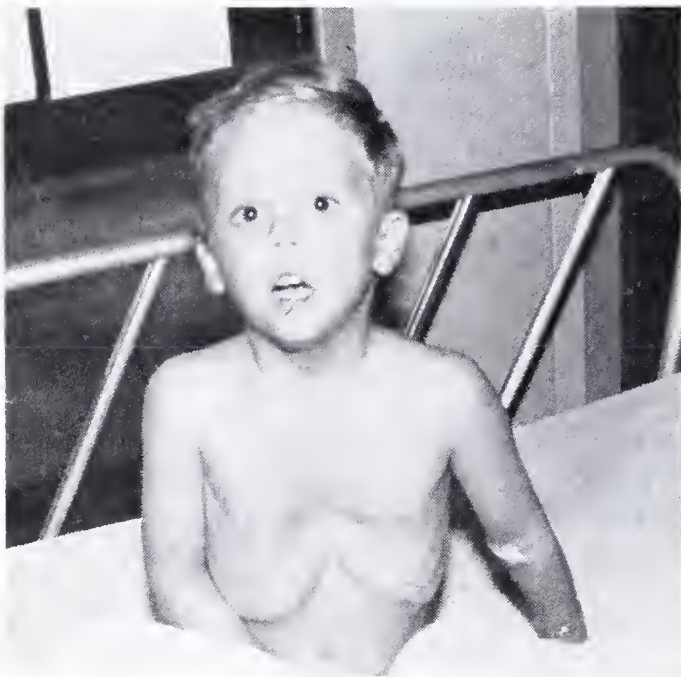


Figure 4a.  
Four-year-old boy with moderately severe pectus excavatum.



Figure 4b.  
The boy in Figure 4a two days after operation.

Figure 5). Though this seems also to be a congenital anomaly, it appears more often in early adolescence. The etiology is again felt to be due to increased length of cartilage. Its incidence is about one-tenth of that of pectus excavatum. The children with pectus carinatum do not have the asthenic appearance, pot belly, or postural abnormalities found in children with pectus excavatum. There is no physiologic data yet to verify the cardiopulmonary improvement which is found after repair of pectus excavatum. Because of the progressive nature of the disorder during adolescence and reports of reoccurrence following early operation, repair is best delayed until more complete growth has been obtained. The operation also consists of a wedge osteotomy and subperichondrial resection of the abnormal cartilages.

Poland's syndrome consists of hypoplasia, or absence of the breast, hypoplasia of the subcutaneous tissue, absence of the costo-sternal portion of the pectoralis major, absence of the pectoralis minor and hypoplasia, or radial anomalies. Operations for this chest wall deformity are largely

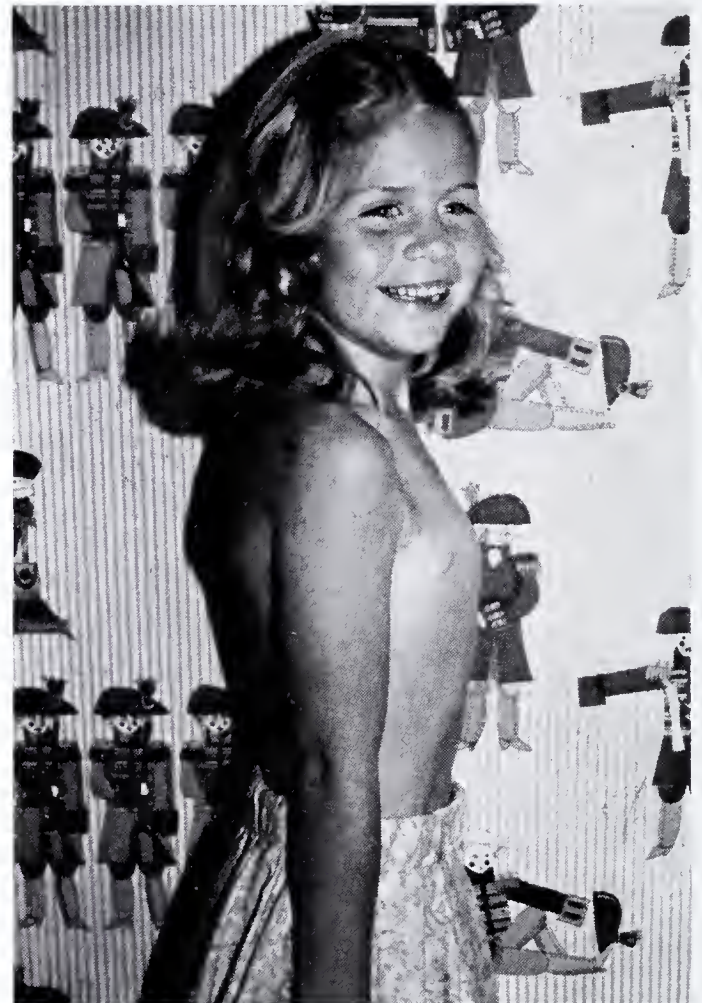


Figure 5.  
A nine-year-old girl with pectus carinatum.



cosmetic and consist of resolution of the chest wall defect should one be present or with augmentation mammoplasty in the female on the affected side (see Figure 6).

Asphyxiating thoracic dystrophy of the newborn was initially described by Jeune, Carron, Beraud, and Loac in 1954 (see Figure 7). This narrow and rigid thoracic cage causes progressive respiratory difficulty. Management has been difficult. Success has been achieved by a sternal splitting operation with results by Waterston<sup>6</sup> and then by Karjoo, Koop, Cornfeld, and Holtzapple.<sup>7</sup>

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Figure 6.

A sixteen-year-old girl with absence of the pectoralis major and mammary hypoplasia components of Poland's syndrome.



Figure 7.

A neonate with the small bell-shaped chest of Le Jeune's Syndrome. Chest tubes have been placed for bilateral tension pneumothoraces.





# Bringing Surgical Sterilization, the Number One Contraceptive Method for Married Couples, to a Low Income Rural Population

Clay N. Wells, M.D., M.P.H.\*

Surgical sterilization is now the most widely used contraceptive method among married couples in the United States, as well as throughout the world.

The National Center for Health Statistics (NCHS) recently reported that in 1976 28% of the U. S. married couples had had a sterilization operation while 22% used the pill.<sup>1</sup>

In 1976 it was estimated that 60 million couples worldwide were protected from conception by surgical sterilization. In 1979 this had increased to 90 million, while 55 million used oral contraception, the second most popular method.<sup>2</sup>

Between 1970 and 1975 the tubal sterilization rate for white women doubled while the rate for black women remained the same.<sup>3</sup>

When the married couples in the NCHS survey were studied in groupings by income, by race, and by age only one subgroup had a decrease in surgical sterilization between 1973 and 1976. Low income\* white couples in the 35-44 age group fell from 45% in 1973 to 38% in 1976.<sup>1</sup> \*(Low income is defined as below 150% of federal poverty level income.)

In Arkansas, as in most states, access to female sterilization for low income women is primarily through federal funds, e.g., Medicaid (Soc. Sec. Title XIX), Family Planning (Title X).<sup>4</sup> Vasectomy sterilization for males has been available on an even more limited basis through Title X. Funding for sterilization for low income men, and women not on Medicaid is quite difficult to obtain.

Access to sterilization is further<sup>5</sup> restricted by DHEW through law, regulations, and guidelines.<sup>4-7</sup> These federal regulations address some of the legal, medical, financial, and psychosocial aspects of surgical sterilization and fail to deal with others.

## Analysis of the Arkansas Family Planning Program Sterilization Grant Results

Funding for sterilization procedures is both

scarce and of low priority at the state as well as the federal level. Funds that have been available in Arkansas have largely been in the form of a special federal grant for that purpose, toward the end of a year with specific and short-time limitations. Such a grant was received October 1, 1978. Its expiration date was December 31, 1978. The grant was primarily intended to help clear up the backlog of applications for financial assistance for surgical sterilization. A *backlog* application here is defined as one signed prior to September 19, 1978. Most of these were from 1978. A few were from 1977. The backlog applicants numbered 126 female, 45 male.

### A. Cancellations of requested financial assistance for sterilization operations:

#### *Backlog Cancellations:*

There were 82 (65%) cancellations in the female applicants. 44 procedures were done.

There were 26 (58%) cancellations in the male applicants. 19 vasectomies were done.

Cancellations were quickly replaced with new (*replacement*) applications, defined as those who signed consent forms between September 19, 1978 and December 27, 1978.

#### *Replacement Cancellations:*

There were 3 (7%) cancellations in the female applicants. 38 procedures were done.

There were 4 (15%) cancellations in the male applicants. 22 vasectomies were done.

In this program all sterilization applicants voluntarily requested financial assistance for a sterilization operation from a local Family Planning Clinic (at a County Health Unit). The patient chose her/his physician. Prospective applicants who were Medicaid recipients, Medicaid eligible, or had any other known third party coverage were referred to her/his own physician and are not included in this study.

### B. Pre-counseling, counseling, and informed consent:

This was done by Family Planning health professionals in accordance with federal law and

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guidelines. All patients so pre-counseled, with documentation approved by the state office were accepted by a physician.

### C. Assessment of priorities for financial assistance:

Due to the exceptional time and funding limitations unofficial priorities were used:

Priority I: Therapeutic sterilization OR significant complications with the pill and/or the IUD, OR very strong socioeconomic indications. One or more living children. Family income is below poverty level.

Priority II: Significant socioeconomic factors are present. Family has two or more children. Family income is below poverty level.

Priority III: Significant medical, health or socioeconomic factors are present. Two or more children. Family income is between poverty level and 150% of poverty level.

Priority IV: Significant medical, health or socioeconomic factors. Two or more children. Family income is between 150% and 200% of poverty level.

Priority V: Applicant is eligible by DHEW regulations, but has no known indications for a sterilization operation beyond the indicated desire to have it done. Family income is below 200% of poverty level.

The risk factors and problems of the spouse were added to those of the applicant in assessing priorities.

### D. Hospital and physician participation:

After approval a letter was mailed to the family planning clinic authorizing reasonable cost financial assistance for female sterilizations of \$350 maximum to the hospital, \$200 maximum to the physician, total maximum \$550. A copy of this letter was mailed to the physician. The clinic notified the patient. The patient then contacted the physician. Specific arrangements for the surgical sterilization were then made by the physician and the patient. Whereas gross hospital bills were usually higher, most hospitals accepted the \$350 reasonable cost arrangement. Twelve hospital bills were for less than \$350. Eight of these were for same-day laparoscopic tubal sterilizations. There were five additional unsolicited voluntary refunds from hospitals, after an unexpected payment was received from insurance. Thirty-three hospitals participated. No hospital requested to participate refused to do so.

Forty-eight physicians did the female procedures. \$200 was accepted by each physician, although usual fees were frequently higher.

After approval of vasectomy assistance a procedure similar to that used with female applicants described above was used, with a letter to the family planning clinic, a copy to the physician, et cetera. A total of 28 physicians did the 41 vasectomies. All were done in the physician's office. A few physicians charged \$100. Two charged \$150. The usual charge was \$125. No physician was paid more than \$150.

### E. Income of clients as related to poverty level income:

	Female clients (N = 82)	Male clients (N = 41)
Below poverty income:	71 (87%)	21 (51%)
Poverty — 150% poverty income:	10 (12%)	13 (32%)
150%-200% poverty income:	1 (1%)	7 (17%)

Those patients with income between 150% and 200% of poverty level received proportionate, partial financial assistance.

### F. Assessment by priority:

Female: (N=82)	Male: (N=41)
Priority I : 55 (67%)	Priority I : 6 (15%)
Priority II : 17 (21%)	Priority II : 15 (36%)
Priority III: 10 (12%)	Priority III: 13 (32%)
	Priority IV: 2 (5%)
	Priority V : 5 (12%)

There were no female applicants in Priority IV or V categories. There were two female never-pregnant applicants, one married; one never married. Neither was income-eligible.

### G. Reason given for cancellation:

The most frequent reason given by female backlog applicants (65% cancellations) was *unintended pregnancy* while waiting for funding; for the male backlog applicants (58% cancellations) changed mind or no show. Replacement applicants (female: 7%; male: 15%) the reasons given were: changed mind or no show.

The most frequent factors associated with non-approval of applications were:

Age under 21; another source of funding was found; federal regulation non-eligibility. A few applicants without medical indication with incomes over 200% of poverty level were not considered eligible for this limited grant.

### H. Other demographics:

Seventy-four (90%) of the female clients and



38 (93%) of the male clients were from counties with less than 50,000 population. Ten (15%) of the females were black. All male clients and applicants were white.

The youngest female client was 21; the oldest, 42; median age, 28. The youngest male client was 21; the oldest, 49; median age, 32.

Seventy-five (91%) of the female clients were married. The other seven (9%) had been previously married. All the male clients were married.

Eight female clients were reported to have 11 children who are mentally retarded. Three male clients were reported to have six children who are mentally retarded.

**Comment:**

While application for financial assistance under this grant was open to applicants of all areas, races, marital, and economic status, it was primarily utilized by white, low income, non-urban, married couples.

The importance of having funding available *before* presentation of sterilization to a potential acceptor is stressed. Many unintended pregnancies occur when there is a significant wait for

funding after a decision to have a sterilization operation has been made.

Thirty-three hospitals and 76 physicians in private practice participated in a cost-containing sterilization program for 123 families despite severe funding and time limitation.

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# Office Orthopaedics

## Bowler's Thumb

Kenneth G. Jones, M.D.\*

Pressure, when applied repeatedly to susceptible tissues, can be an elusive cause of infirmity. None of the chronic stress syndromes seen by the physician is more subtle than that peculiar to the avid ten-pin player. Seldom does he possess insight necessary to discern the cause of his discomfort. He presents himself to his doctor with a sore thumb which has begun to interfere with his game, more particularly his score.

In bowling, the ball is secured in the hand between the thumb and the opposing first two fingers. All three digits are inserted into strategically placed holes in the ball. The nature of the construction of this grip is such that the thumb can be inserted into the thumb-hole up to the web-space. Gripping of the ball places firm pressure over the base of the proximal phalanx just distal to the sesamoid bones of the short flexor tendons of the thumb. As a consequence, one or both of the two digital nerves that pass superficial to these structures and the sheath of the flexor pollicis longus tendon, are compromised between the bowling ball and these unyielding structures. An inflammatory reaction occurs in the digital nerve, or nerves, producing pain and hypersensitivity at

the base of the thumb. If the bowler's dedication to the game is sufficiently compelling, he may develop a palpable neuroma and numbness distal to the point of compression. This neuroma is often erroneously diagnosed as a ganglion of the tendon sheath. However, given a history of vigorous bowling, and observing that the lesion is more mobile from side to side than the usual tendon sheath ganglion, and further observing that sustained pressure over the tumor produces paresthesia in the distribution of the digital nerve, the diagnosis should pose no problem.

The only satisfactory treatment is to remove the irritation — that is, the repeated application of pressure in that area. If the devotee of the lanes wishes to continue his activity, this can, in some instances, be accomplished by changing balls to permit the thumb to extend less deeply into the thumb-hole, thereby altering the point of contact between the thumb and the ball; or by rounding the edge of the hole where it presses against the thumb; or by wearing a pad over the thumb.

If these measures fail, giving up bowling would seem to be the only added means of controlling the symptoms.

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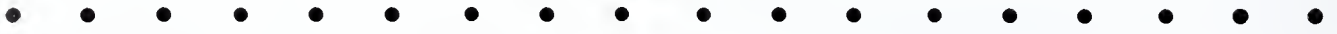






## ELECTROCARDIOGRAM

## OF THE MONTH



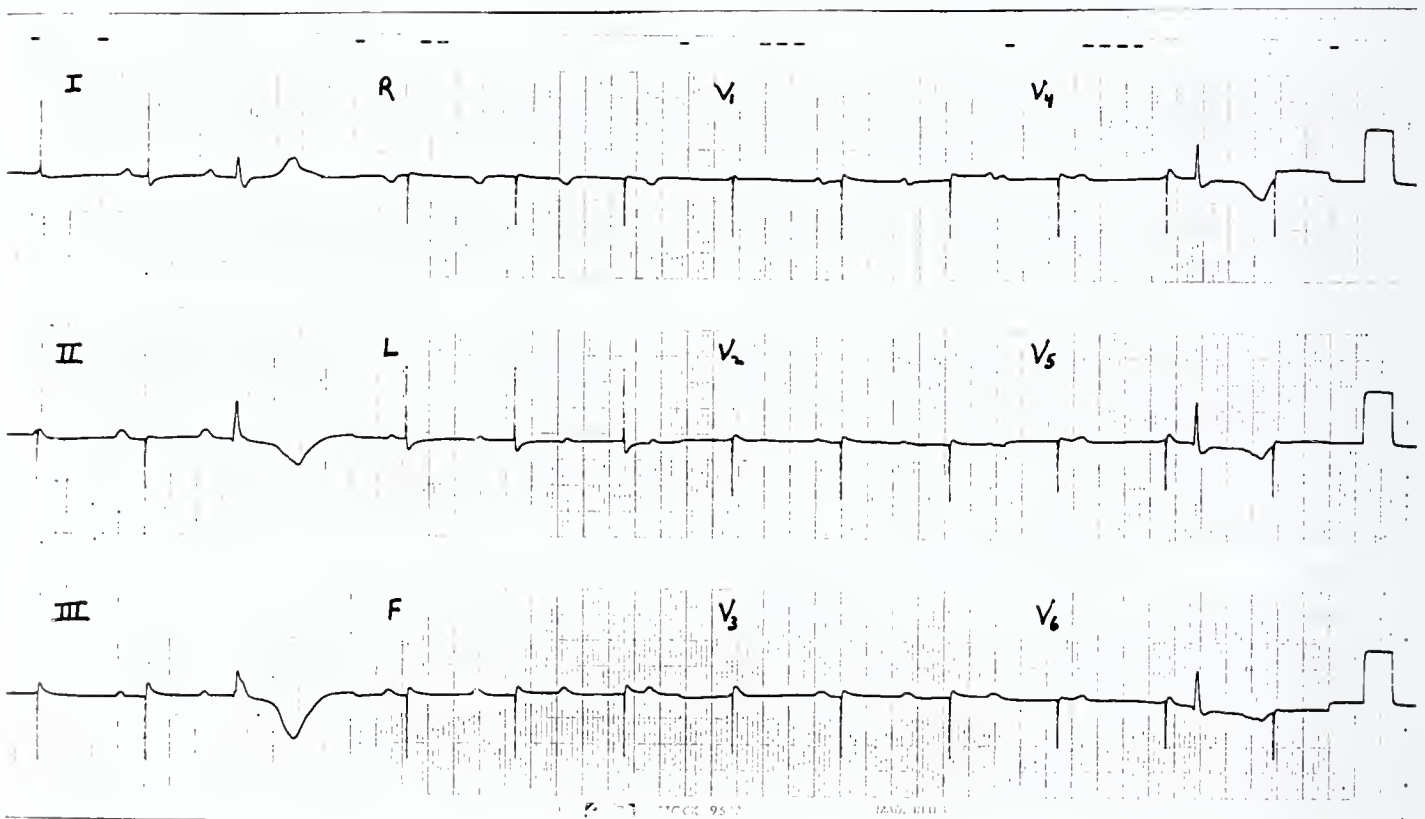
The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 236)

**HISTORY:** Ms. C. M. is 80 years old. She experienced Stokes-Adams attacks several years previously, treated by placement of a permanent demand type transvenous pacemaker. Two days before admission, she had syncope and angina. On admission, she was not responsive, was hypotensive, and had a pulse rate less than 10 beats per minute. A-waves at a rate of 88 per minute were visible in her neck veins and she was observed to have very rare cannon A-waves. Her twelve lead ECG is shown below.

This trace illustrates which of the following choices:

1. Failure of the pacemaker to sense properly.
2. Failure of the pacemaker to capture properly.
3. Nonconduction of most of her P-waves.
4. Two endogenous beats.



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# Pediatric Review

## Guidelines for Cardio-Pulmonary Resuscitation in Pediatrics

Robert H. Warren, M.D.;\* Lisa Lyons Solis, R.N.,\*\* and Mary Ann Speel, R.N.\*\*\*

### INTRODUCTION:

It is generally accepted that the mechanism of cardiac arrest, the procedure of resuscitation, and the drugs and techniques used in children differ from those used in adults. Proper preparation for successful cardio-pulmonary resuscitation of children of all age groups demands that these differences be taken into account.

Cardiac asystole is usually due to respiratory insufficiency and the resultant anoxic state except in children who have complicated congenital heart disease or acute cardiac inflammatory disease. The child with cardio-pulmonary arrest caused by sepsis, hypovolemic shock, central nervous system disorders, or intoxication should be vigorously resuscitated, using measures to immediately re-establish an adequate airway. The restoration of pulmonary ventilation and oxygenation aids in the reversal of hypercarbia and sets the state necessary for the resumption of cardiac activity once the acidosis is corrected.

It is important to remember that the approach to any specific cardio-pulmonary arrest situation must be an individual approach just as the underlying etiology for that particular cardio-pulmonary arrest is an individual disease. While there are always common elements in any arrest, the individuality of both the patient and the response of that patient to a particular disease must not be forgotten.

Therefore, this information is intended to be used to help formulate a basic background which may be utilized and modified as necessary when dealing with a particular arrest situation. It is not intended as a specific protocol to be used blindly in a cook-book fashion when dealing with a cardio-pulmonary arrest.

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### THE HUMAN ELEMENT:

The cardio-pulmonary resuscitation procedure can only be successful if a team approach to the problem is utilized. Some medical centers employ a specific "cardiac arrest" team but this is not necessary as long as staff members know their jobs when the situation arises. This obviously breaks down when week-end staff are rotated and vacations come up. The main concept, however, is that all should have general knowledge of the guidelines established for cardio-pulmonary resuscitation. Much of the orientation can be done through inservice programs which, because of rotation of physicians and nurses will need to be given on a continuing basis.

Some consideration must be given to the methods of communication regarding cardiac arrest. Hospitals have found it convenient to use the paging system with a specific code to alert the staff to an arrest.

### THE EQUIPMENT:

The necessary equipment should be conveniently stored on a highly mobile and maneuverable cart so that one individual could deliver all needed equipment, including drugs, to the proper area as rapidly as possible. Such a cart should be located in every area where there is the possibility of a child being critically ill. Anticipation is a very important concept of intensive care of the critically ill child that is a potential candidate to have a cardiac arrest.

The cart itself should have wheels that can be tracked or moved in a crab-like fashion for maneuverability. There should be work space, cut-down tray, IV pole and operation light. The cart should be equipped with an oxygen source and appropriate bag and mask equipment for ventilation. The drawers should be in modular form so that it can be readily seen if anything is missing. This also aids the nurse in restocking the cart. The cart should contain a minimum number of carefully selected drugs.



## SPECIFIC INSTRUCTIONS TO NURSING PERSONNEL:

Specific nursing procedure and instructions to the nurses are an important part of any guideline, since the nurse is often the one who initiates resuscitative measures. It is therefore helpful to the nursing personnel to have specific instructions with which to begin as they may have to be alone with the patient for an indeterminate period of time before assistance arrives. This type of instruction should ideally be given in an inservice program and made appropriate to our own situation with regard to equipment and potential personnel available. It should be emphasized that the nurses' place is with the patient, assisting the physician and not going after equipment that should have been present in the first place.

*Specific Instruction 1* — Note time of arrest.

*Discussion 1* — To reduce the dangers caused by confusion and over enthusiastic helpers, it is highly advisable to post one intelligent observer not only to record the time of arrest but also to aid as coordinator and recorder, to list each drug and procedure, and to assist in overall organization. After the initial minutes of resuscitation effort have passed, there is often a chaos that can develop making further therapy grossly inaccurate.

*Specific Instruction 2* — Evaluate the airway.

*Discussion 2* — The most important single factor contributing to successful resuscitation is immediate clearing of the airway. The airway should be checked for any obstruction to air flow such as the tongue or foreign body or material; and the obstruction should be relieved as indicated by use of the fingers or suctioning procedure.

*Specific Instruction 3* — Ventilate the patient by interposing one inflation of the chest after each five external cardiac compressions.

*Discussion 3* — The patient should be ventilated by the most effective possible manner depending upon resources available. This could mean that mouth-to-mouth ventilation would be indicated in the absence of any equipment, such as bag and mask. Ideally, initial ventilation should be carried out using a bag and mask capable of providing 100% oxygen to the patient. If the initial resuscitation effort is being handled by only one person, the best procedure is to perform mouth-to-mouth ventilation using a 10:2 ratio — two quick lung inflations after each 10 chest compressions. It is also important to remember that

infants and small children should have both the mouth and nose covered by the person giving ventilation. Ventilation in infants and children should be gentle as only small volumes are needed. Effectiveness is evaluated by noting rise and fall of the chest wall. Especially in the newborn the problem of stomach inflation makes early consideration of passing a nasogastric tube mandatory. Ventilation with bag and mask properly performed is completely adequate and when effective, it should be maintained rather than an immediate attempt made to intubate the patient. The time chosen for intubation should be determined by the status of the patient and availability of personnel experienced in intubation.

*Specific Instruction 4* — Consider insertion of nasogastric tube.

*Discussion 4* — This is of primary importance in children up to 1-2 years of age. With both bag and mask or mouth-to-mouth resuscitation the usual situation is to at least partially fill the stomach with air. This in turn produces some compromise to diaphragm excursion and reduces effective ventilation. Of equal importance is the problem of secondary aspiration if a patient has a stomach full of liquid or solid material. A #8 feeding tube is most commonly used in the infant and larger sizes would be indicated for older patients.

*Specific Instruction 5* — Begin external cardiac massage as follows:

- Neonate            120 times/min.
- Infant             100 times/min.
- Child              80 times/min.

*Discussion 5* — In older children, either the one hand on top of the other technique or merely the heel of one hand may be used to provide cardiac massage. In small children and infants, the use of the heel of one hand or just the tips of the index and middle fingers. The heart of infants and children lies higher in the chest than it does in adults therefore the pressure should be exerted over *midsternal* area and not the lower half of the sternum. Improper technique may produce fractured ribs or liver laceration. The patient should be placed on as firm a surface as possible prior to beginning compression efforts.

*Specific Instruction 6* — Establish EKG tracing.

*Discussion 6* — Without EKG monitoring, there is no way to determine whether asystole or fibrillation exists. This is significant as the two

are approached differently in treatment. In addition, the EKG monitors the effectiveness of all subsequent therapy.

*Specific Instruction 7* — Establish IV line.

*Discussion 7* — If an adequate IV line is functioning, there is a ready access for administering the necessary drugs. If the patient has only a small butterfly needle in place, attempts should be made to secure a second and better line. In recent years, the intracardiac route of administering drugs has declined probably due to the fact that it is a highly dangerous procedure if not performed by an experienced physician. This points even more to the importance of a patent IV line.

*Specific Instruction 8* — Draw up in a syringe Epinephrine 1:10,000 an amount equivalent to 0.05 cc/kg and label.

*Discussion 8* — The physician may want to inject a STAT dose of epinephrine either intravenously or intratracheally prior to instituting a drip of either Isuprel or epinephrine. This can be given quickly and can be exerting its action on the heart while a drip solution is being prepared. The intratracheal technique is being widely used today as a replacement for the intracardiac route for the reasons mentioned in #7.

*Specific Instruction 9* — Prepare an Isuprel drip: Use Isuprel (Isoproterenol) 1:5000 — Use 1 mg (5 cc) per every 11 lbs. body weight. This is added to 50 cc D5W.

*Discussion 9* — The Isuprel solution can be used to increase the heart rate and also improve cardiac contractility. It should be ready for use if the physician calls for it. The Isuprel drip is run at a rate of 15 microdrops per pound or 1 microgram/kilogram/minute infusing into the patient. This will have to be adjusted based on cardiac response.

*Specific Instruction 10* — Draw up in a syringe NaHCO<sub>3</sub> (Na. bicarbonate) equivalent to 1.0 cc/lb. and label.

*Discussion 10* — Acidosis is an immediate sequelae of cardio-pulmonary arrest. In fact, acidosis is often the etiology of the arrest. The physician may want to give a STAT dose of NaHCO<sub>3</sub> and it should be ready for immediate use.

*Specific Instruction 11* — Prepare for delivery of other drugs.

*Discussion 11* — Other drugs that the physician

might call for should be at the nurse's side ready for immediate use. Refer to drug sheet below.

*Specific Instruction 12* — Prepare for blood gas evaluation by being sure that appropriate needles are present.

*Discussion 12* — The use of arterial blood gas is an important way to evaluate the stability of the patient's cardio-pulmonary system.

### THE SCENE OF THE ARREST:

As soon as assistance arrives, the primary nurse should establish herself immediately with the physician and should not leave the patient's side. She delegates other duties to a second nurse who will be in charge of making appropriate notes, getting equipment that is not on hand and organizing activities not directly at the patient's bedside. The primary nurse becomes the physician's first assistant and is responsible for the following: (1) suctioning, (2) helping with intubation, (3) starting and monitoring the Isuprel drip, (4) anticipating the physician's needs, and (5) helping the physician as he asks.

There must always be a sense of urgency at the beginning and during the entire resuscitation procedure. Remember that the longer it is necessary to continue the cardio-pulmonary resuscitation efforts, the less likely it is to succeed. Even under optimum circumstances, deterioration is progressive and the sense of urgency must be preserved until all efforts have been abandoned.

### USE OF DEFIBRILLATOR:

If ventricular fibrillation is present, defibrillation through closed chest must be done. Electrode paste is applied to the electrode. One paddle is placed on the anterior chest wall at the level of the apex slightly left of the sternum and the second paddle is placed on the left anterior axillary line so that the current traverses the heart. Have everyone stand clear of the patient and give D.C. shock.

Electrode paddle size — Infants, 4.5 cm diameter; older children, 8 cm diameter.

Electrode interface — Electrode cream; electrode paste; saline soaked gauze (most practical, easily wiped off).

— Be sure the interface between one paddle and another does not touch when placed on the body, it may cause a short circuit and an insufficient amount of current may traverse the heart.

— Don't use alcohol pads as interface, they will burn the skin.



*Current :* The optimum amount of electrical energy that should be used without causing myocardial damage has not been established. Recommended doses as follows:

- Initial dose — 2 joules (watts/sec.)/Kg.
- If not successful — Double the dose.
- If still not successful — Check the patient's acid base status.

NOTE: Patients on digoxin should be started at the lowest amount of joules the machine will deliver and increased slowly.

SUMMARY:

THE STEPS OF CARDIO-PULMONARY RESUSCITATION

- 1. NOTE TIME — “SOUND CODE” — SEND FOR EMERGENCY CART
- 2. EVALUATE AIRWAY
- 3. VENTILATE PATIENT
- 4. BEGIN CARDIAC MASSAGE
- 5. INSERT NASOGASTRIC TUBE
- 6. ESTABLISH ECG
- 7. ESTABLISH IV LINE
- 8. PREPARE DRUGS
- 9. BLOOD GAS DETERMINATION

ARKANSAS CHILDREN’S HOSPITAL  
PEDIATRIC INTENSIVE CARE UNIT

Emergency Drug Sheet

Patient Name \_\_\_\_\_ Weight \_\_\_\_\_ Age \_\_\_\_\_  
Endotracheal Tube Size:  
16 ÷ Age (in years) ÷ 4 = \_\_\_\_\_  
Medication                      Route                      Dose  
Atropine: 0.01 mg/Kg              SO, IV                      \_\_\_\_\_ mg

Sodium Bicarbonate:  
1-2 mEq/Kg                      IV, IC                      \_\_\_\_\_ mg  
Calcium Gluconate:  
10% 1-2 cc/Kg                      IV                      \_\_\_\_\_ cc  
Epinephrine 1:10,000  
0.1-0.2 cc/Kg                      IV, IC                      \_\_\_\_\_ cc  
Dopamine: 200 mg/500 cc D<sub>5</sub>W  
(400 mcg/cc)  
3-10 mcg/Kg/min.                      IV                      \_\_\_\_\_ cc/hr  
Isuprel: 1 mg/250 cc D<sub>5</sub>W  
(4 mcg/cc)  
.1-2 mcg/Kg/min.                      IV                      \_\_\_\_\_ cc/hr

Calculations:  
Dopamine:  
$$\frac{\# \text{mcg/Kg/min} \times \text{Wt. in Kg}}{400 \text{ mcg/cc}} \times 60 = \# \text{cc/hr}$$
  
Isuprel:  
$$\frac{\# \text{mcg/Kg/min} \times \text{Wt. in Kg}}{4 \text{ mcg/cc}} \times 60 = \# \text{cc/hr}$$

This sheet is filled out completely and placed at the head of each critically ill patient's bed. These calculated dosages save several minutes of valuable time during an arrest.

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## EDITORIAL

# Editorial Opinions on Effects of Heart Disease

Alfred Kahn, Jr., M.D.

There are many interesting new reports in the field of cardiology. One of particular interest is an editorial by R. B. Devereux in *The American Journal of Medicine* (volume 67, page 729, November, 1979) on mitral valve prolapse. From a virtual unknown entity mitral valve prolapse has become a well known clinical fact in the past ten years. As Devereux points out, 5% of the population has mitral valve prolapse whether detected by heart sound abnormalities, echocardiography or autopsy. This concordance of findings is marred by the fact that Devereux reports 10% of patients with mitral valve prolapse are said to have floppy valves due to a breaking down of the valve's central collagen layer. The prolapse can affect the anterior valve leaflet but more often affects the posterior one. The disorder also affects the annulus and chorda and endineae. It also worsens with age. The author suggests this is due to a hereditary defect in the structural proteins of the mitral valve. The functional abnormalities are said to be precipitated not alone by the floppy valve but the associated disorders of the annulus, chorda and endineae and the size of the left ventricle. In some anatomic situations normal valves may prolapse, particularly in congenital heart disease. Devereux feels that mitral valve prolapse is probably a relatively benign disease. Some of the apparent mortality and morbidity may be the result of other disorders being lumped together with the mitral prolapse series. He does feel that there is some morbidity due to this entity including bacterial endocarditis, mitral regurgitation and ventricular fibrillation.

Editorializing in *Circulation* (volume 60, p. 969, November, 1979) Elliot Rapaport discussed the clinical status of percutaneous transluminal coronary angioplasty. According to Rapaport Dr. Andreas Gruntzig was the first to try percutaneous transluminal angioplasty on the coro-

nary vessels although a similar technique had been used in peripheral vessels for more than 10 years. Using a balloon type catheter, the constricted coronary artery is dilated by four to six atmospheric pressures in the balloon which is filled with saline and Renografin solution. The procedure can be repeated several times with the catheter in place. Rapaport reports that the dilated vessel stays open after the procedure in some cases to the extent that there is true hemodynamic improvement which persists for months. Ordinarily, this procedure is used on the proximal part of the coronary artery. It is estimated that only five percent are considered candidates for percutaneous transluminal angioplasty. The author quotes the procedure as having an immediate 1-2% mortality and a 2-3% later mortality. Some other interesting facts are brought out in this article. Left main coronary artery disease may be a contraindication as some deaths followed dilatation of this vessel. The mechanical effect of dilation is thought to be a splitting of the surface of the arterio sclerotic plaque; the body then may remove the underlying contents thus widening the lumen — but 10% re-stenose. It is Rapaport's opinion that percutaneous transluminal angioplasty will have limited application; since survival of the applicable cases is already good without surgery, this new technique will not reduce mortality; if successful, the procedure may diminish symptoms such as angina pectoris. It is suggested that the procedure needs investigation in multivessel disease, left main coronary artery disease even though the initial studies were discouraging, with patients with poor ventricular function, etc. This technique needs considerable study before usage in clinical medicine outside of research centers.

Another editorial on a current cardiac problem which is of considerable interest to the profession



is "Coronary Artery By-pass Surgery — Another View," by J. Phillips and R. Mautner (Archives of Internal Medicine, volume 139, p. 1221, November, 1979). The authors point out that there is a real problem in deciding who should undergo coronary artery catheterization by anginoid pain — and further based on the catheterization findings, who should undergo by-pass surgery as they point out some physicians are very "pro" cardiac surgery, thus the problem is readily resolved for the strongly committed. For most other physicians, there are some guidelines which the authors recommend in deciding to catheterize the heart; they used four. Firstly, catheterization is recommended if the patient's life style demands activities which cause angina pectoris despite medical therapy. Secondly, a strong suspicion that the patient has left main coronary artery disease from a treadmill test or nocturnal angina or post prandial angina. Thirdly, if the physician is in doubt as to whether angina pectoris is present. Lastly, catheterization may be performed to convince a patient that he does not have angina pectoris.

Another interesting point discussed by Phillips and Mautner is the relationship between oc-

clusive disease and anginal pain. They draw a comparison between narrowed blood vessels in the heart and renal artery stenosis. Not every case of high blood pressure who has renal artery stenosis is cured by vascular repair surgery. By the same token, many patients with occlusive vascular disease may be symptomatic from the disease. If a renin test is done on the renal vascular cases and a high renin is found, surgery is usually helpful. The authors would like some type of test for coronary artery occlusive disease which accurately predict which patients would be helped by surgery — like the renin test does in kidney disease. The authors have made up a table which they use in trying to determine who should be submitted to surgery. It is summarized as follows: Left main coronary artery disease is usually a surgical indication. Three vessel coronary artery disease is probably an indication for surgery. Two vessel disease may be an indication for surgery if the patient's life style is compromised by his heart disease. One vessel coronary artery disease would possibly be considered a surgical candidate if his life style is compromised.

## "From Other Years"

*Arkansas Medical Monthly*

Vol. 1 No. 7 October, 1880 p. 324

Contract Practice. — In view of the fact that many physicians may contract to perform medical services for *all corporations*, charitable or otherwise (railroad companies, for instance), at reduced rates from our established fee-bill, it is proposed by some enterprising citizen to organize, in due form, by filing articles of incorporation, etc., an association of private families, to be called "The Domestic Doctor Scotchers." The object is to utilize these technical advantages in the employment of a physician. The best looking doctor will, of course, get the appointment, and all others who are not on a salary will please take notice and prepare to seek "hash" elsewhere.

\* \* \* \* \*

The *Physician and Surgeon* tells of a medical student who could not give the geographical boundaries of his native state, when so questioned, after applying for matriculation at a school in Michigan. We can beat that down here. One of the students of a medical college in this country,

when asked upon which side of the head the left hemisphere of the brain was situated, had to give it up. When informed upon the subject, he said the reason he didn't know was because he was left-handed.

— UAMS Library,  
*History of Medicine,*  
*Archives Division*

### ANSWER—Electrocardiogram of the Month

DISCUSSION: The ECG strikingly illustrates failure of the pacemaker to capture. The pacemaker artifacts progress through almost the entire trace at a rate of 71 pulses per minute. P-waves also are seen progressing through the artifacts at a rate of 88 P-waves per minute. No QRS complexes are generated by the pacer artifacts. There are two endogenous or native beats seen at a rate of 8 per minute. The first endogenous beat is in lead I and follows a P-wave. The second endogenous complex is in V<sub>4</sub> and fails to inhibit the pacemaker, which fires on the T-wave. Thus, all choices are correct. The patient did much better when a temporary pacemaker was positioned.

## MEDICINE IN THE NEWS



### THE MONTH IN WASHINGTON

The Professional Standards Review Organization (PSRO) program for Medicare-Medicaid should be allowed to develop to its full potential, the American Medical Association has told Congress.

The medical profession has accepted PSRO as a quality assurance program. "Therefore, we feel that it is inappropriate to evaluate the program solely based on a measure of dollars and cents."

Alan Nelson, M.D., a member of the AMA Board of Trustees, told the House Ways and Means subcommittee on Health that the PSRO program is a successful example of cooperation between the medical profession and the federal government. Some 167,000 physicians are participating, Dr. Nelson noted.

One of the problems with PSRO since its inception in 1972 has been the tendency of administrations, Democratic and Republican, to eye the program as one strictly designed to save money. There have been crisis points in recent years when PSRO was believed to be in jeopardy because of high-level belief that it was costing more than it was saving.

Dr. Nelson pointed out to the subcommittee that the PSRO law declares it is designed to "promote the effective, efficient and economical delivery of health care services of proper quality."

There have been numerous analyses in recent years of the cost-effectiveness of PSRO. The two most recent, by the Health Care Financing Administration (HCFA) and the Congressional Budget Office (CBO), used the same data base but reached opposite conclusions. The CBO said PSRO's were not cost effective. HCFA said that in fiscal year 1978 they saved \$21 million.

"Because of this divergence in interpreting the PSRO program data and the fact that PSRO effectiveness should be reviewed by means other than just cost-effectiveness, the AMA views such single directional analysis as impractical," said Dr. Nelson. The matter is especially critical now, he added, because the Health and Human Services (HHS) Department has started to terminate

PSRO's that it deems to be "poorly performing and cost-ineffective."

It is premature to attempt to measure the cost-effectiveness of the PSRO program, Dr. Nelson said; adding that "the PSRO program has been consistently underfunded, with some PSRO's not even receiving all of the funds necessary to properly design and subsequently implement the sophisticated review and data collection operations essential to conduct a proper review program. Until the program becomes fully operational, it is a mistake to attempt to ascertain its cost-effectiveness."

The AMA witness also urged Congress to guarantee the confidentiality of PSRO information. "The effectiveness of the PSRO program is inextricably linked to its ability to preserve the confidentiality of patient, physician, and hospital profiles."

The AMA also recommended a provision that would subject services performed by or in federally-operated health care institutions to PSRO review and to provide for a more effective administration of the program. The AMA-developed amendments to the PSRO law were recommended.

\* \* \* \* \*

Congress this year is nearing final action on a major extension and expansion of the community mental health center program.

The House recently approved a four-year extension authorizing federal aid of \$78 million next fiscal year, climbing to \$200 million by 1984. The states would play a greater role than at present. The Senate has passed a more generous measure.

A controversial patients bill of rights provision was deleted in the Senate bill. The House measure did not contain such a provision.

The bill, approved 277-15, involves the states more fully in the planning and provision of community health services in hopes of attracting more state funding.

New special grant categories were established for services to the chronically mentally ill and for disturbed children. Another new program would



deal with providing services within ambulatory health care centers.

Funding would be provided for services to those groups that state and local health planning agencies find to be underserved or unserved. The states, through local planning processes, will determine which groups in which areas are in need of special attention.

The big money bill for the Department of Health and Human Services' operations next fiscal year has finally started moving through Congress. The \$57.1 billion approved by the House was \$336 million less than the Administration requested.

By and large, the lawmakers went along with the strict economy budget prepared by President Carter's budget men. The interest in the congressional actions centered for the most part on how individual programs fared. Congress made clear earlier that it was in no mood to add significantly larger sums to the bare-bones money requests.

Some key programs were not listed in the House appropriations bill, including health education and the national health service corps, authorizations for which are proceeding on a separate track with appropriations to follow.

Running down the major HHS breakdowns and comparisons with budget requests:

Public Health Service,	
	\$6.7 billion + \$162 million
Health Care Financing	
Administration (Medicaid)	\$26 billion — \$ 21 million
Social Security	
Administration (Medicare)	\$19 billion — \$400 million
Human Development Services	
	\$5.3 billion — \$ 68 million
Under the PHS:	
Health Services Administration	
	\$1.2 billion — \$746,000
Center for Disease Control	
	\$329 million + \$ 36 million
Nat. Institutes of Health	
	\$3.6 billion + \$126 million
Alcohol, Drug Abuse and	
Mental Health	
	\$1 billion — \$1.4 million
Health Resources Administration	
	\$168 million + \$ 14 million

PHS programs receiving slight boosts include family planning, state health service grants, maternal and child health, NIH research activities, drug abuse and health planning. Decreases were suffered by alcoholism, community health centers, home health services, mental health, health maintenance organizations, and professional standards review organizations.

With respect to HMO's, the Appropriations Committee noted that the program was having difficulty spending its current budget and could end the fiscal year "with a fairly large carryover balance on hand."

The report continued:

"The committee has received information about the increasing number of federally funded HMO's which are having difficulty reaching the breakeven point, and which are not in compliance with federal qualification guidelines. A number have defaulted on their federally guaranteed operating loans. The committee is concerned about the way the department establishes new plans in geographic areas where HMO's already exist."

Two of the major HHS initiatives heading into the 1980's were supposed to be major new emphasis on health education and alcohol abuse programs.

The committee's handling of these programs underlines how far they have dropped out of sight as a result of the economy push and possibly a change of mind in the administration.

Health education got \$13.7 million, only the amount requested and only a continuation of the funding for the current year.

Alcoholism fared worse. The project grant request for the National Institute on Alcoholism and Alcohol Abuse was slashed by \$35.3 million and new funding to implement special alcohol initiatives next year was eliminated.

\* \* \* \* \*

The tools economists employ to assess cost-benefit ratios are of limited value in health care, the Congressional Office of Technology Assessment (OTA) has conceded. An OTA report frankly discussing shortcoming as well as strengths of economic standards for health care came as something of a relief to the health professions, since the OTA and a federal agency (the National Center for Health Care Technology) have been viewed with misgivings by the medical profession. The fear has been that strictly economic judg-

ments could be used to discourage valuable technological and other medical methods, such as CAT scanners.

An OTA report on the implications of cost-effectiveness of medical technology says the results of CEA and CBA studies "should not be the primary determinants of any decision concerning health care." Contrary to some expectations, the report adds, the use of CEA/CBA, by itself, "will not be an effective tool for reducing or controlling overall expenditures for medical care."

However, the OTA asserts that the process of explicitly analyzing costs and benefits "can lead to better decisions in health care, and interest in the use of CEA/CBA is likely to increase substantially."

Senator Edward Kennedy (D., MA), chairman of the Senate Human Resources Subcommittee on Health, said "limitations on resources require that the benefits of medical technologies be weighed against the costs." He said the report "underscores my belief that the simplistic use of cost-effectiveness analysis will not resolve many of our basic dilemmas in health care delivery."

Cost Benefit Analysis involves expressing both costs and benefits in dollars, resulting in a net plus or minus dollar figure or in a numerical ratio.

Cost Effectiveness Analysis differs in that costs are expressed in dollars but effectiveness is measured in non-monetary units such as lives-saved or life-years-gained. Both CEA and CBA are designed to integrate the economic and health aspects of decisions.

\* \* \* \* \*

The nation last year spent an estimated \$212.2 billion for health care, 12.5 percent above 1978, the government has reported.

The 1979 health spending amounted to an estimated \$943 per person, of that amount, \$406, or 43 percent, represented public spending.

The latest comprehensive health spending estimates were compiled by the Health Care Financing Administration (HCFA) and show that outlays by Medicare and Medicaid amounted to \$29.3 billion and \$21.7 billion respectively, combining to pay for 27 percent of all personal health care in the nation. Benefits for hospital care alone amounted to \$29.7 billion for both programs.

Highlights:

★ Expenditures for health care included \$5.4

billion in premiums to private health insurance, \$60.9 billion in federal payments and \$30.5 billion in state and local government funds.

★ The \$85.3 billion bill for hospital care represented 40 percent of total health care spending in 1979. These expenditures increased 12.5 percent over 1978.

★ Spending for physician services increased 13.4 percent to \$40.6 billion — 19 percent of all health care spending.

★ All third parties combined — private health insurers, governments, philanthropic and industry — financed 68 percent of the \$188.6 billion in personal health care in 1979, ranging from 92 percent of hospital care services to 64 percent of physicians' services and 39 percent of the remainder.

★ Direct payments by consumers reached \$60 billion in 1979. This represented 32 percent of all personal health care expenses.

\* \* \* \* \*

The Defense Department is confident it can handle physical exams in case of a draft without having to seek the aid of civilian physicians.

The number of military and recently-retired military physicians are "more than adequate" to handle the job, a spokesman said. The recently retired group (about 300) are subject to call-up in event of a national emergency.

Draft physicals would be carried out in 67 Armed Forces Examining and Entrance stations across the country and in Hawaii, Puerto Rico and Alaska. Draftees who passed the physicals could be inducted immediately.

\* \* \* \* \*

Legislation was introduced in the House to prohibit federal reimbursement under the Medicaid program for drugs that have not been found effective by the Food and Drug Administration. Rep. Bob Eckhardt (D., TX), chairman of the House Commerce Subcommittee on Oversight, said as much as \$400 million has been "wasted" over the past 10 years on such drugs.

\* \* \* \* \*

The Kaiser-Permanente medical care program has assumed management and financial responsibility for Georgetown University Community Health Plan, which has been renamed Kaiser-Georgetown Community Health Plan, Inc.

The Georgetown Plan provides medical and hospital care on a prepaid basis for about 54,000



members in the District of Columbia, Maryland, and Virginia. Kaiser-Permanente is the nation's largest group practice prepayment health care delivery system. Most of the operations have been on the West Coast with the exception of Cleveland, Ohio.

\* \* \* \* \*

Illicit drug use has increased sharply in the past 20 years, according to two studies from the government.

The proportion of people who have used marijuana has increased from four percent to 68 percent. Harder drugs — cocaine, heroin, hallucinogens, or inhalants — have been tried by 33 percent of 18- to 25-year-olds.

The studies show that between 1972 and 1979 experience with marijuana and cocaine has doubled among young teenagers and among those over 25 years of age. Between ages 18 and 25, cocaine use has tripled and marijuana use has increased from 48 percent to 68 percent.

The illicit use of stimulants, sedatives and tranquilizers reported by 12- to 17-year-olds and those over age 25 has remained relatively constant over the last decade. However, these drugs showed large increases by 18- to 25-year-olds until 1977. Experience with heroin has been constant during the 1970's with about three percent or less, reporting they have tried it.

\* \* \* \* \*

# keeping up

## Category 1 Continuing Medical Education Programs Available in Arkansas

### NUCLEAR MEDICINE SYMPOSIUM ON GASTROENTEROLOGY

Presented by W. Turner Harris, M.D., and Jerry L. Prather, M.D., *December 6, 1980, 8:30 a.m. to 4:00 p.m.*, Education Building, Room E155, St. Vincent Infirmary. Six hours Category I credit. Registration fee: \$25, includes continental breakfast and lunch.

### ETHICAL BASIS FOR MEDICAL DECISIONS

Presented by Fred O. Henker, M.D., *December 6, 1980, 8:30 a.m. to 5:00 p.m.*, UAMSC Education II Building, Room G141. Seven hours Category I credit. Registration fee: \$15.

### RECURRING EDUCATION PROGRAMS

Unless otherwise indicated, programs are for one to two hours Category I credit.

#### FAYETTEVILLE — AHEC-NW

*Medical Teaching Conference*, each Saturday, 7:30 a.m., Washington Regional Medical Center.

#### FAYETTEVILLE — VA MEDICAL CENTER

*Radiology Conference*, December 4th and January 15th, 1:00 p.m., Conference Room.

*Pathology Conference*, December 9th and January 15th, 1:30 p.m., Conference Room.

*Mortality Conference*, December 11th and January 8th, 3:00 p.m., Conference Room.

#### FORT SMITH — AHEC

*Tumor Conference*, every Tuesday, 12:00 noon. Fourth Floor Conference Room, Sparks Regional Medical Center.

#### JONESBORO — ST. BERNARD'S REGIONAL MEDICAL CENTER

*Interesting Cases*, second and fourth Tuesday, 12:00 noon, Dietary Conference Room. Sponsored by AHEC-NE.

*Tumor Conference*, third Tuesday, 12:00 noon, Dietary Conference Room. Sponsored by AHEC-NE.

*Medical Lecture Series*, each Friday except third Friday, 11:50 a.m., Dietary Conference Room. Sponsored by AHEC-NE.

*Chest Conference*, third Friday, 11:50 a.m., Dietary Conference Room. Sponsored by AHEC-NE.

As organizations accredited for continuing medical education by the Liaison Committee on Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.

# **LITTLE ROCK — BAPTIST MEDICAL CENTER**

*Pulmonary Care Conference*, each Tuesday, 12:00 noon to 1:00 p.m., Dining Room #4.

*Central Arkansas Primary Care Conference*, second Tuesday, 7:00 p.m. to 9:00 p.m., Auditorium. Two hours Category I credit.

*Cardiopulmonary Resuscitation Course*, second Wednesday, 6:00 p.m. to midnight, Human Resource Development Area. Six hours Category I credit.

*Emergency Medicine Conference*, December 10, January 7, 21, 12:30 p.m. to 1:30 p.m., Conference Room #1.

*Morbidity and Mortality Conference*, first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1. NOTE: January 1st conference cancelled.

*Surgery Conference*, December 11, 18, and January 8, 15, 22, 29, 8:00 a.m. to 9:00 a.m., Conference Room.

# **LITTLE ROCK — ST. VINCENT INFIRMARY**

*Interhospital GI Problems Conference*, first Monday, 6:00 p.m. to 7:00 p.m., Room E155, Education Wing.

*Pediatric Conference*, first and third Monday, 12:30 p.m. to 1:30 p.m., Room E159, Education Wing.

*Interhospital Urology Grand Rounds*, first Tuesday, 5:30 p.m. to 6:30 p.m., Room E159, Education Wing.

*Peripheral Vascular Disease Conference*, third Tuesday, 6:00 p.m. to 7:00 p.m., Room E159, Education Wing.

*Neuropathology Conference*, third Tuesday, 5:00 p.m. to 6:00 p.m., Room S1169, Laboratory.

*Pulmonary Conference*, first and third Thursday, 12:00 noon to 1:00 p.m., Room E159, Education Wing.

*Cardiology Conference*, second and fourth Thursday, 12:00 noon to 1:00 p.m., Room E159, Education Wing.

# **LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES**

*Neuroradiology Conference*, each Wednesday, 4:00 p.m. to 5:00 p.m., Department of Radiology Conference Room.

*Radiology Continuing Education Lecture Series*, two Wednesdays each month, 6:00 p.m. to 7:30 p.m., Department of Radiology Conference Room.

*Categorical Course in Radiology*, each weekday except Wednesday, 1:15 p.m. to 5:00 p.m.; Wednesday, 5:00 p.m. to 5:45 p.m., Department of Radiology.

*Internal Medicine Grand Rounds*, each Thursday, 8:00 a.m. to 9:00 a.m., Education I Auditorium.

# **PINE BLUFF — AHEC-SW**

*Obstetrics and Gynecology Conference*, second Monday, 12:30 p.m., Classroom B, Jefferson Hospital.

*Family Practice Conference*, first, third, and fourth Monday, 12:30 p.m., Classroom B, Jefferson Hospital.

*Psychiatry Conference*, each Tuesday, 12:30 p.m., A-V Classroom, Melville Library, AHEC-Pine Bluff Building.

*Southeast Arkansas Medical Lecture Series*, fourth Wednesday, 6:30 p.m. to 9:00 p.m., dinner meeting at local restaurant.

*Surgical-Medical Subspecialty Conference*, first Wednesday of alternate months, 12:30 p.m., Classroom B, Jefferson Hospital.

*Surgery Conference*, first Wednesday of alternate months, 12:30 p.m., Classroom B, Jefferson Hospital.

*Internal Medicine Conference*, second and fourth Wednesday, 12:30 p.m., Classroom B, Jefferson Hospital.

*Pediatric Conference*, third Wednesday, 12:30 p.m., Classroom B, Jefferson Hospital.

*Radiology Conference*, second Thursday, 12:30 p.m., Classroom B, Jefferson Hospital.

*Chest Conference*, each Friday, 12:30 p.m., Classroom B, Jefferson Hospital.



**THINGS**



**TO**

**COME**

**December 4-6, 1980**

"The Athlete: Risks of Injury and Sudden Death, Preventive and Therapeutic Considerations." Sponsored by the American Heart Association Council on Clinical Cardiology. Grand Hyatt Hotel, New York City. For further infor-

mation, contact Neal Moore, Public Relations Director, American Heart Association — Arkansas Affiliate, Post Office Box 1610, Little Rock 72203; phone (501) 375-9148.

**February 12-14, 1981**

Sixth International Joint Conference on Stroke and Cerebral Circulation. American Heart Association. Century Plaza Hotel, Los Angeles, California. For further information, contact Neal Moore, Public Relations Director, American Heart Association — Arkansas Affiliate, Post Office Box 1610, Little Rock 72203; phone (501) 375-9148.





## PERSONAL AND NEWS ITEMS

### RECEPTION FOR PHYSICIANS

Doctors John and Myra Gillean, new physicians in Ashdown, were honored with a reception given by community citizens.

### KIWANIS SPEAKER

Dr. Jerry Biggerstaff of Osceola recently spoke to local Kiwanis Club on steps to be taken in case of accidental poisoning.

### FORREST CITY PHYSICIAN

Dr. Thomas J. Beasley, an ophthalmologist, has opened an office in Forrest City.

### PHYSICIAN SPEAKS

Dr. Jabez Jackson, Jr., of Newport, recently addressed the Breast Feeding Support Group. Dr. Jackson's presentation included the effects of smoking, alcohol and drugs during pregnancy and lactation.

### HEALTH PROGRAM

Dr. John Hill, a pathologist, spoke to the Batesville Kiwanis Club about immunization for control of communicable diseases.

### NATION-WIDE FINALIST

Dr. Amail Chudy of North Little Rock, has been named one of the nine finalists for the Good Housekeeping Doctor of the Year Award. The competition is sponsored by the American Academy of Family Physicians and the Good Housekeeping magazine.

### PHYSICIANS HONORED

The Independence County Medical Society honored three of its physicians at the Annual Doctors' Day banquet at the Batesville Country Club. Dr. Finis Q. Wyatt was named "Doctor of the Year" because of his long service in care of patients, his involvement with the community, and his assistance to medical students at the University of Arkansas. Dr. Paul Gray was honored for representing the second councilor district on the Medical Society's Council since 1960. Dr. Jim Lytle was recognized for serving the County Med-

ical Society as a longtime delegate at State Medical Society meetings.

### DR. GILLER SPEAKS

Dr. John Giller, Jr., of El Dorado discussed some of the major changes in the proposed State Constitution at a meeting sponsored by the For- dyce Business and Professional Women's Club. Dr. Giller served as chairman of the Committee on the Finance and Taxation Article of the Constitutional Convention.

### MERITORIOUS AWARD

The Arkansas Psychiatric Society presented its Meritorious Award to Dr. William "Bill" G. Reese, a Little Rock physician, for his service, achievement and contributions in the field of medicine, psychiatry and mental health.

### CABOT PHYSICIAN WINS HORSE SHOW

Dr. Jerry Chapman's horse, Smokey, won the slow gaited pleasure division for racking horses at the Arkansas State Championship Horse Show at Pine Bluff.

### FORT SMITH PEDIATRICIAN

Dr. Louay Nassri has joined Holt-Krock Clinic for the practice of General Pediatrics and Pediatric Pulmonology.

### AUXILIARY SPEAKER

Mountain Home pediatrician Helga Chock recently spoke to the Baxter General Hospital Auxiliary.

### AMERICAN ACADEMY OF OTOLARYNGOLOGY

During the recent annual meeting of the American Academy of Otolaryngology, a course on "Outpatient Surgery in Otolaryngology" was presented by Doctors James J. Pappas and Ellery C. Gay, Jr., of Little Rock. Another course, "Within-Clinic Hearing Aid Dispensing: Office Requirements, Organization and Procedures" was presented by Doctors James J. Pappas and H. A. Ted Bailey, Jr., also of Little Rock.





## NEW MEMBERS

The Craighead-Poinsett County Medical Society has three new members:

### **DR. JOHN E. LeJEUNE**

Dr. John LeJeune was born in New Orleans.

In 1973, he received a B.S. from Baylor University and in 1977 was granted his medical degree by the University of Texas, Southwestern Medical School at Dallas. Dr. LeJeune served his internship and residency at John Peter Smith Hospital in Fort Worth.

Dr. LeJeune is a clinical professor of Family Practice at the University of Arkansas College of Medicine.

A Family Practice specialist, Dr. LeJeune has an office located at 924 South Main in Jonesboro.

### **DR. LARRY C. SEARS**

A native of Carlsbad, New Mexico, Dr. Larry Sears' pre-med education was at McMurrey College in Abilene, Texas. In 1977, he was graduated by the University of Texas, Southwestern Medical School, Dallas.

Dr. Sears served his internship and residency at John Peter Smith Hospital in Fort Worth.

His office is at 924 South Main, Jonesboro. He is a Family Practitioner.

### **DR. WILLIAM C. YOUNG, JR.**

Dr. William C. Young, born in Helena, is a graduate of the University of Tennessee at Knoxville. In 1975, he was graduated by the University of Arkansas College of Medicine. His internship and Otolaryngology residency were served at the University of Arkansas Medical Center.

Dr. Young, an Otolaryngologist, has opened his office at 808 South Church in Jonesboro.

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### **DR. GUY J. L'HEUREUX**

Dr. Guy L'Heureux has joined the Crittenden County Medical Society. He was born in Granby, Quebec, Canada.

After attending the Seminary of Nicolet and

Victoriaville College, Dr. L'Heureux was graduated from the Laval University Faculty of Medicine, Quebec, in 1966. He served his internship at L'Hotel — Dieu of Quebec. From 1965 to 1971, Dr. L'Heureux served residencies at Laval University and L'Hotel Dieu of Quebec.

From 1971 to 1980, Dr. L'Heureux practiced medicine in Victoriaville, Quebec, and with the L'Hotel — Dieu of Arthabaska.

Dr. L'Heureux, an Orthopaedic Surgeon, has his office at 228 Tyler, Suite 108, in West Memphis.

\* \* \*

The Franklin County Medical Society has two new members on its roll:

### **DR. ROBERT G. JEFFERS**

Dr. Robert Jeffers was born in Clarksville. In 1970, he received a B.S. in Biology from Arkansas Tech University. Tulane University School of Medicine in New Orleans granted him his medical degree in 1974. While in New Orleans, Dr. Jeffers served a rotating internship at Charity Hospital.

From 1975 to 1978, Dr. Jeffers served a Pediatric Residency at William Beaumont Army Medical Center. While with the United States Army, he served as a Pediatrician on the staff of the Fifth General Hospital in West Germany.

Dr. Jeffers practices pediatrics at 317 West Commercial in Ozark.

### **DR. THOMAS C. JEFFERSON**

A native of Manhattan, Kansas, Dr. Thomas Jefferson earned his B.S. in Chemistry at the University of Arkansas. In 1974, he was graduated by the University of Arkansas College of Medicine.

Dr. Jefferson served a Pediatric internship and residency at William Beaumont Army Medical Center. He served as a staff physician with the 97th General Hospital in Frankfurt, West Germany, from 1977 to July 1980.

Dr. Jefferson, a Pediatrician, has his office at 317 West Commercial in Ozark.

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The Jefferson County Medical Society has added three to its membership roll:

### **DR. CLINTON J. FULLER, III**

Dr. Clinton Fuller, a native of Nashville, Arkansas, attended the University of Arkansas at Fayetteville.

In 1976, Dr. Fuller was graduated by the University of Arkansas College of Medicine. He served a flexible internship at the University Hos-



## NEW MEMBERS

pital. His radiology residency was at the same institution from 1977 to 1980.

Dr. Fuller is certified by the American Board of Radiology. His office is at 40th and Hickory in Pine Bluff.

### **DR. THOMAS E. INGRAM**

Dr. Thomas Ingram was born in Cleveland, Mississippi. He is a 1972 graduate of the Delta State College in Cleveland.

In 1975, Dr. Ingram was awarded his medical degree by the University of Mississippi School of Medicine in Jackson. His internship and residency were served at the University of Mississippi Medical Center. Dr. Ingram's specialty is Neurology.

Dr. Ingram moved to Pine Bluff in October of 1979. His office is located at 1726 Doctors Drive in Pine Bluff.

### **DR. FERDINAND K. SAMUEL**

A native of Nazvid, India, Dr. Ferdinand Samuel is a graduate of Mar-Ivanios College, Trivandrum, India. His medical degree was granted by the Christian Medical College, Vellore, Madras, India, in 1972.

Dr. Samuel served a Surgery internship at Franklin Square Hospital in Baltimore. His Anesthesiology residency was at the University of Maryland Hospital in Baltimore.

Dr. Samuel's specialty is Anesthesiology; his office is located at 1801 West 40th Street, Suite 2B, in Pine Bluff.

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Two new members have joined the White County Medical Society:

### **DR. GLEN T. BLUE**

Dr. Glen Blue, a graduate of Harding College in Searcy, was born in Jonesboro.

Dr. Blue was graduated from the University of Arkansas College of Medicine in 1975. His internship was at Methodist Hospital in Memphis. From 1976 to 1980, Dr. Blue served a residency

with the University of Oklahoma Tulsa Medical College. His specialty is General Surgery.

Dr. Blue's office is located at 1300 South Main Street in Searcy.

### **DR. LARRY W. WEATHERS**

Dr. Larry Weathers was born in Batesville.

He is a 1970 graduate of the University of Arkansas. Dr. Weathers received his medical degree from the Faculty of Medicine of the University Autonoma of Guadalajara, Guadalajara, Jalisco, Mexico, in 1974. He is certified under the Fifth Pathway program of Rutgers University at the United Hospitals of Newark, New Jersey.

His internship and Internal Medicine residency were at New Jersey Medical College — Hackensack Hospital with one year rotated in Newark through Martland Hospital, East Orange Veterans' Administration Medical Center and Newark Beth Israel Hospital. Dr. Weathers was the chief medical resident and a cardiology fellow at New Jersey Medical College — Hackensack Hospital. He also served a fellowship in Cardiology at Washington University — St. Luke Hospitals in St. Louis, Missouri.

Dr. Weathers' office for the practice of Internal Medicine and Cardiology is at 1300 South Main in Searcy.

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### **COURTESY MEMBERS**

The Pulaski County Medical Society has added two new courtesy members to its roll:

### **DR. DAVID N. COLLINS**

Dr. David Collins is an Orthopaedic Surgery resident at the University of Arkansas College of Medicine. His medical degree was granted by the University of Iowa College of Medicine.

### **DR. DAVID V. POER**

Dr. David Poer is an Ophthalmological Fellow. He is associated with Doctors' Hospital, the Veterans' Administration Hospital and the University of Arkansas College of Medicine. Dr. Poer received his degree from the University of Michigan Medical School.





## OBITUARY

### DR. BILL DAVE STEWART

Dr. Bill D. Stewart of Little Rock died September 22, 1980. He was born December 17, 1921, in Conway.

After attending Henderson State Teachers College, Dr. Stewart was graduated by the University of Arkansas College of Medicine in 1945. His internship and surgical residency were served at St. Vincent Infirmary. He served with the United States Army Medical Corps from 1946 to 1948. Dr. Stewart served as chief resident of surgery service at Colorado General Hospital in Denver and as an instructor of surgery at the University of Colorado Medical School. Dr. Stewart began practice in Little Rock in 1953. He served as chief of staff at St. Vincent for the year 1974-1975. Dr. Stewart was certified by the American Board of Surgery. He was a Thoracic Surgeon.

Dr. Stewart is survived by his wife, Mrs. JoAnn Young Stewart, a son and a daughter.



## RESOLUTIONS



### DR. DAVIS GOLDSTEIN

WHEREAS, God in His infinite mercy has seen fit to call from our midst Dr. Davis Goldstein, and

WHEREAS, Dr. Goldstein has faithfully served

his patients in the community at large throughout his entire medical career, and

WHEREAS, Dr. Goldstein, during his years of practice, has reflected the highest ideals of his profession, and

WHEREAS, the Sebastian County Medical Society mourns his loss,

THEREFORE, BE IT RESOLVED, by the Sebastian County Medical Society, in its regular meeting on September 9, 1980, hereby adopts these Resolutions and directs that a copy be furnished the family and that a copy be published in the Journal of the Arkansas Medical Society.

Charles Bailey, M.D.

President

Sebastian County Medical Society

\* \* \* \*

### DR. WILLIAM B. HODGES

WHEREAS, the recent death of our colleague, William B. Hodges, M.D., has caused us deepest sorrow, and

WHEREAS, since becoming a member of the Society ten years ago, he has enjoyed a reputation of outstanding accomplishment in service to the community and to the profession, and

WHEREAS, Dr. Hodges upheld the highest standards of the practice of medicine and was noted for his deep concern for the welfare of his patients,

BE IT THEREFORE RESOLVED, THAT, this resolution be adopted as a token of our appreciation of Dr. Hodges' life, and

THAT, a copy of this resolution be forwarded to Dr. Hodges' family as an expression of our deepest sympathy, and

THAT, a copy be forwarded to the Journal of the Arkansas Medical Society for publication.

By the Direction of the Memorials Committee  
T. Duel Brown, M.D., Chairman

Henry Hollenberg, M.D.

Robert Watson, M.D.

Pulaski County Medical Society





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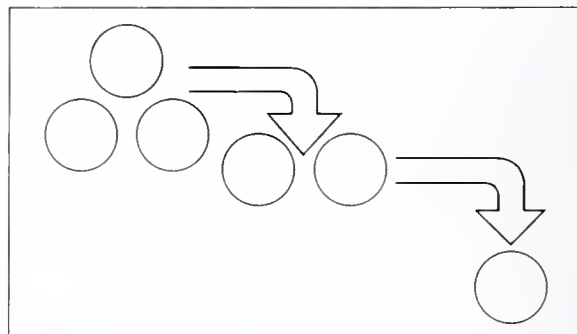
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\*Sellers EM: *Drug Metab Rev* 8(1):5-11, 1978



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**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed, drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported, should these occur, discontinue drug. Isolated reports of neutropenia, jaundice, periodic blood counts and liver function tests advisable during long-term therapy



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## Toxic-Shock Syndrome

Deane G. Baldwin, M.D., Robert L. Henry, M.D., Frederick R. Levin, M.D.,  
Thomas E. Paulus, M.D., and Lloyd R. Warford, M.D.\*

In 1978 Todd, et al,<sup>1</sup> described the Toxic-Shock Syndrome (TSS) and presented evidence that its cause may be an exotoxin from a *Staphylococcus aureus* related to phage — group 1. Recently the United States Center for Disease Control has identified 55 cases of the syndrome occurring since October, 1979.<sup>2</sup>

TSS may begin abruptly with fever, vomiting and diarrhea, sore throat, headache, abdominal pain and myalgia. Hypotensive shock occurs within hours or days and a diffuse scarlatiniform rash with non-purulent bulbar conjunctivitis can occur at any time. Subcutaneous edema of the extremities and face occurs as well as oliguria. Disoriented or combative behavior is present in many, while cardiac dysfunction and/or the adult respiratory distress syndrome may be a finding. The case mortality ratio of TSS is between ten (10) and fifteen (15) percent, but this figure is said to be decreasing as knowledge of the disease is being disseminated to the medical profession.<sup>2</sup>

This report includes five patients with clinical TSS from a private pediatric group practice in Central Arkansas. It is hoped this report will offer an up-to-date picture of the syndrome and suggest how successful prevention of the full-blown illness might be accomplished. Other implications will be discussed.

### MATERIAL AND METHODS

Four female patients and one male patient were seen between March 6, 1977, and June 6, 1980, by one or all of us. The first two patients were admitted to the hospital in March and July of 1977. Patient three was admitted to the hospital in December of 1979, and patients four and five were admitted in March and May of 1980.

All patients were from middle and upper income families who lived in Central Arkansas and were admitted to one of two private hospitals in

Little Rock. The four females ranged in age from 14 to 18 years. The male patient was nine years old.

Both admitting hospitals had excellent laboratory and intensive care facilities. Bacterial cultures were done at the admitting hospital while viral cultures were sent to the nearby University of Arkansas for Medical Sciences Campus. Viral serology was forwarded to the Center for Disease Control in Atlanta, Georgia, and occasionally to the University.

All cases are reported with respect to symptoms, hospital course, treatment and other pertinent material. Laboratory data will be summarized in the results.

### CASE REPORTS

Patient 1, a nine-year-old male, became ill two days prior to admission with symptoms of fever and sore throat. He was given penicillin G in the emergency room of a local hospital. Shortly thereafter he developed nausea with vomiting and seemed to be "strangely incoherent" to familial observers. His family was ill with influenza-like symptoms and it was presumed he had the same. Because of his behavioral symptoms he was returned to the hospital by his family and admitted. On admission his pharynx was very injected and partially covered with a thin white exudate. After 24 hours of intravenous fluids and intravenous ampicillin he improved although he complained of a very sore throat. Early on the third day of his illness he developed severe diarrhea, became cyanotic around his lips and nailbeds and his urine output decreased. His blood pressure dropped and he was considered to be in shock with a pressure of 40/20. Dopamine was given along with increased fluids and a rise of blood pressure to 106/70 was accomplished within a few hours. Intravenous chloramphenicol and high doses of aqueous penicillin were ordered. He was also given Decadron® by a neurologist for possible

\*Little Rock Pediatric Clinic, 500 South University, Little Rock, Arkansas 72205.



CNS edema. Later in the day he developed an erythematous rash over his lower extremities and trunk. By the fifth day he was better and able to maintain his blood pressure without dopamine. He progressively improved and on the ninth hospital day was discharged. He had desquamation of his extremities a week or so later. During this time his sibling was seen with fever and severe myalgia of the lower extremities. He recovered without treatment.

Patient 2 was a 14-year-old female who was admitted from the emergency service after two days of fever and sore throat. While in the emergency room she developed protracted vomiting and appeared to have constitutional signs and symptoms that warranted hospital admission. Her examination revealed a very injected pharynx and severe nausea. Abdominal tenderness was elicited on palpation but neither liver or spleen was felt and no localization of pain was noted. The patient was put to bed and given intravenous fluids. Twelve hours later intravenous ampicillin was begun after blood and throat cultures had been obtained. During the second day of hospitalization the patient complained of abdominal and chest pain and at some time during that day developed a scarlatiniform rash over her trunk and lower extremities. There was marked erythema of the vulva and a copious brown vaginal discharge was noted as well. Tachypnea was also a symptom. A chest x-ray was normal. One physician termed her "toxic." Treatment was left unchanged for another 24 hours. On the morning of the second full day of hospitalization the patient was complaining of severe precordial pain, cyanosis of the nailbeds was visible and tachypnea was striking. The rash had become more intense and was now generalized. Her labia were intensely red and exfoliating. Her pulse was rapid and weak. A blood pressure was recorded at 60/30 and she was thought to be in shock from an infection tentatively diagnosed as Rocky Mountain Spotted Fever. A bolus of fluids was given intravenously and as soon as possible dopamine was initiated. Chloramphenicol and large doses of aqueous penicillin were administered. Over a 24-hour period the patient's blood pressure was stabilized and she improved. Urinary output had returned to normal. Forty-eight hours later she no longer required dopamine to maintain a normal blood pressure. For the first time she was able to rest and was no longer anxious. On the

tenth day of confinement she was discharged. Follow-up examination one week later was normal, however, her hands and feet were desquamating. Records show that this continued for two or three weeks.

Patient 3 was an 18-year-old who was seen three days prior to admission with fever, nausea and vomiting. She was treated with anti-nausea medication and antipyretics. One day prior to admission she was seen with the same symptoms as well as a sore throat and a "streptococcal or viral" rash. She was given penicillin G, and also anti-diarrheal medication. She returned one day later and was admitted to the hospital because she had become confused and hallucinatory. She also had developed a headache and nuchal rigidity and her rash had become petechial and bullous on the lower extremities. Subcutaneous edema was noted as was a gray, thick exudative tonsillitis. A lumbar puncture was normal. A chest x-ray revealed possible infiltrative disease in both lung bases and possibly a right pleural effusion. The heart appeared slightly enlarged but an echocardiogram was normal. A copious brown vaginal discharge was evident. The abdomen was tender but no mass or organ was felt. Blood, stool, throat, vaginal and urine cultures were started and 500 mgm. of chloramphenicol was administered every eight hours. Viral cultures were obtained from throat washings and acute and convalescent serum specimens were sent to CDC in Atlanta for study.

Three liters of D5NS with KCL was begun intravenously every 24 hours. On the second day of confinement, hallucinations became worse and included auditory, sensory and visual phenomena. The tentative diagnosis was viral encephalopathy and influenza, however, TSS was entertained as a prospective diagnosis. A neurologist was consulted regarding the patient's behavior and prescribed Decadron® for cerebral edema. Day four found the patient with tachycardia, tachypnea and a gallop rhythm. Her skin lesions and rash had begun to resolve but she remained restless, hallucinatory and combative. She required sedatives in fairly large doses to control her abnormal behavior. Her urine output decreased remarkably but monitoring of vital signs revealed normal blood pressures. On the fifth day her pulse and respirations slowed while her urine output increased. She did, however, remain restless, hallucinatory and combative. On the seventh day she

began improving dramatically with only slight alterations in confusion and by the eighth day she was lucid. Signs of her illness disappeared rapidly and desquamation of her hands and feet were noted. She was discharged on her twelfth hospital day.

Patient 4 was an 18-year-old who was skiing in Colorado and had become very fatigued. She developed fever and sore throat 24 hours before returning home. At home she had a syncopal episode and remained ill with fever for the next 48 hours. On the day of admission she awakened with a generalized maculopapular rash and swelling of her hands and feet. She was seen in an emergency room and referred to the office with a diagnosis of Rocky Mountain Spotted Fever. She had an injected but non-exudated pharynx. She was admitted to the hospital and given a balanced solution of electrolytes and chloramphenicol after cultures were taken. She improved gradually and remained coherent except at night when she would have hallucinations. The hallucinations continued until day five, when they disappeared. The rash she had on admission was fading and her edema was gone. She was discharged on the eighth hospital day on oral medication. She had desquamation of her extremities a week or so later.

Patient 5 came to our clinic on the day of admission with a high fever, nausea, headache, nuchal rigidity and was incapacitated to such a degree that she was subjected to an immediate lumbar puncture. She also complained of an extremely sore throat. Her spinal fluid was clear with normal sugar and protein levels. Cultures of her C.S.F. along with blood, stool, throat and vaginal cultures were obtained upon admission to the hospital. Aqueous penicillin, two million units q4h was given intravenously with a balanced salt and glucose solution. The patient failed to improve and developed severe diarrhea and vomiting as well as erythematous rash on all pressure points and lower abdomen. Subcutaneous edema of the hands, feet and face were noted. TSS was diagnosed and she was given cephalothin for a few hours and later chloramphenicol was added. In 24 hours she had improved considerably. Her course rapidly improved thereafter and she was discharged on the sixth hospital day on oral antibiotics. She returned in one week to the office with her only complaint being desqua-

mation of her fingers and toes and a vaginal discharge that was treated successfully with mycostatin suppositories.

## RESULTS

### (A) SYMPTOMS

Generally the symptoms of TSS were profound and incapacitating almost from the beginning of the illness. All the patients had fever, gastrointestinal symptoms, and a very sore throat. These symptoms were usually present at or within 48 hours of the onset. Their throats were injected or covered with a filmy white to thick gray exudate. A non-purulent conjunctivitis occurred in those with a rash. Abdominal pain, headache, myalgia and/or chest pain was quite common during the course of the illness. Syncopal-like episodes occurred in two patients. Central nervous system symptoms ranging from incoherent speech to hallucinations or combativeness occurred in all but two patients. Tachypnea was an early finding in three patients. All developed desquamation of their extremities. Rash was a common but variable sign. It often was identical to Scarlet Fever but could be macular and even petechial, similar to the rash seen in Rocky Mountain Spotted Fever. In one patient it appeared to be more of a flush like that of scalded skin. Some form or another occurred in all patients. Only two were admitted with a rash. Two developed the rash within 24 hours after admission but before shock ensued and one developed the rash after being treated for shock. Three of the females had a copious vaginal discharge. Subcutaneous edema was recorded to be present in three patients. Shock with oliguria was a complication in the first two patients and oliguria without shock in the last three patients.

### (B) HEMATOLOGIC DATA

All patients demonstrated a marked shift of their neutrophils to a more immature form. The actual white cell counts were normal or only moderately elevated. Sedimentation rates were elevated in all four patients who had the test.

Anemia did not appear to be a factor in the disease and reticulocyte counts performed on three patients were normal. Platelet counts were low in every patient who experienced shock but remained normal in two of the patients who escaped shock. Partial thromboplastin times were variable and while a fibrinogen level was low in one patient, no fibrinogen fragments were seen.



Jaundice was not clinically noted and total serum bilirubin levels were only slightly elevated in two of the four patients in which the test was run. Prothrombin times were abnormal in the two patients experiencing shock but not in the others.

### (C) SERUM ELECTROLYTES

Serum sodium, potassium and chloride were variable. Carbon dioxide determinations were normal or lowered but severe acidosis was not noted.

Serum creatinine and blood urea nitrogen levels were markedly elevated in the two patients who developed shock but were normal in the fourth patient and not measured in the fifth. The BUN was elevated in patient three but not the creatinine. Neither the BUN nor the creatinine levels were elevated in patients four and five.

Uric acid levels were high in four of the five patients tested. Remarkably higher levels were found in the first three patients. (Table 1.)

Serum glucose levels were variable but ran generally higher than normal.

Serum albumin levels were variable but in most cases the A/G ratio was low. Serum calcium levels were low in all patients in which the determination was made. (Table 1.)

Ammonia levels were normal in the three patients who underwent the determination.

### (D) SERUM ENZYME STUDIES

Patient 5 recovered from her illness without elevated enzymes while the remaining four had

high levels. (Table 2.) CPK determinations reached high levels in patients 1 and 3, moderately high levels in patients 2 and 4, and normal levels in patient 5. The male patient had a CPK level of 1,581 u. His male sibling who was studied had a CPK level of 5,188 u.

The SGOT, SGPT, and LDH levels were variable but most were slightly elevated across the board.

One or more ASO titers measured in two patients were within normal limits.

### (E) MICROBIOLOGY

Blood cultures were performed on all five patients and all were sterile. Fourteen other cultures on cerebrospinal fluid (2), throat (4), urine (2), stool (3) and vaginal secretions (3), were negative for *Staphylococcus aureus* and no single pathogenic bacteria was cultured more than once from all cultures taken. Not one patient grew an organism from blood, urine, or C.S.F. cultures.

Routine febrile agglutinins that included Tularemia and Rocky Mountain Spotted Fever were non-contributory. In those patients where serologic tests for fungi, syphilis, leptospirosis, Legionnaires Disease and other varied and rare diseases were performed, none were positive. Drug screening tests were negative on two patients. None had positive pregnancy tests. Infectious mononucleosis screening tests were initially positive in two patients but repeated tests and heterophile agglutinations were negative.

Patients 2 and 4 had negative acute and convalescent serum titers for Influenza A & B and para influenza 1 & 2. Patient 3 had a slight elevation in the acute and convalescent serum titers for Influenza A Russian with a titer of 1:64 on both occasions.

Throat washings and stool specimens for viral cultures were negative in the three patients in whom the tests were done.

Skin tests for tuberculosis were all negative and antinuclear antibody titers were within the range of normal in all tested.

### (F) MENSES

In the recent CDC report the most provocative finding in TSS is that women are affected many more times than men and the high number of women who become ill do so within a few days of the onset of their menstrual period.<sup>2</sup> In our patients all females were menstruating during part of their illness and all used tampons. The

TABLE 1.

PT.	gm/dl				mgm/dl		URIC ACID
	T.P.	ALBU- MIN	GLOB- ULIN	A/G	CA	PO4	
1	6.7	3.4	3.3	1.0	6.2	6.5	9.9
2	5.9	3.3	2.6	1.27	8.4	2.9	8.9
3	6.5	4.2	2.3	1.9	6.6	2.5	3.2
4	4.3	2.6	1.7	1.5	7.2	2.2	—
5	—	—	—	—	—	—	—

TABLE 2.

N	PT.	1	2	3	4	5
(21-215)	CPK	1538	652	1030	806	54
(8-33)	SGOT	65	54	47	57	45
(0-45)	SGPT	25	22	55	33	—
(100-190)	LDH	358	170	283	240	172
(30-115)	Alkaline Phosphatase	167	114	454	182	—

tampons used were not necessarily manufactured by the same company.

### DISCUSSION

From the case reports one would like to believe that early recognition and prompt treatment of TSS hastens the patient's recovery and reduces morbidity. Prompt treatment being adequate water and electrolyte replacement, proper monitoring and penicillinase resistant antibiotics. If these measures stand the test of time, they will no doubt become specific therapeutic measures and a "new" disease will be brought under control.

While the cause of TSS remains unproven, *Staphylococcus aureus* has remained the most suspect organism in an illness thought to be infectious in nature. Todd,<sup>1</sup> in his original report, cultured *Staphylococcus aureus* from some surface area of all seven of his patients and in all he found the organism to react to group I phages. Todd also demonstrated the capability of the organism to produce a positive Nikolsky sign in newborn mice with a cleavage plane through the basal layer of the epidermis.

A later study has reported positive cultures for *Staphylococcus aureus* in 16 or 17 vaginal cultures from women with TSS and, furthermore, an increased recurrence rate was noted in those women with TSS if they had not been treated with a penicillinase resistant antibiotic.<sup>3</sup>

Still more evidence supporting *Staphylococcus aureus* is that another syndrome affecting infants and proven to be caused by *Staphylococcus* is the Staphylococcal Scalded Skin Syndrome (SSSS). SSSS has a very similar spectrum of skin lesions as those seen in TSS including desquamation, exfoliation, bullous formation and scarlatiniform eruptions. Like SSSS, TSS has negative blood cultures, suggesting a generalized reaction to an absorbed toxin. Significant differences are that TSS enduces cleavage in the granular layer of the epidermis and patients affected by SSSS are infants with little or no symptoms of toxicity.<sup>4</sup>

Curran and Al-Saliki<sup>4</sup> have speculated that mucous membrane colonization in SSSS produces the generalized scarlatiniform eruption and suggest that the circumcision site is conducive to both bacterial growth and rapid absorption of exotoxin. This, they report, could account for the strikingly higher incidence of the severest form, generalized exfoliative disease, in male newborns (5.3 : 1).

This brings us the predominance of female patients with TSS and the association with menstruation noted in other reports as well as ours.<sup>2,3</sup> Four female patients in our series used tampons from various manufacturers and all the patients became ill at some time during their menstrual period.

Friedrick and Siegesmund<sup>5</sup> have demonstrated alterations of the vaginal mucosa associated with the use of tampons, more specifically those considered super-absorbent. These alterations include drying, epithelial layering and micro-ulcerations. One can speculate that these lesions could enhance the absorption of toxins from bacteria pushed into the vagina from surface areas around the perineum upon insertion of a tampon. It has previously been suggested that tampons might favor the growth of the bacterium in the vagina or absorption of the toxins from the vagina or uterus.<sup>3</sup>

Tampons could alter the rate of bacterial growth by increasing available nutrients and altering intravaginal oxygen concentration.

One of the most significant findings in our group of patients is that not one culture was positive for *Staphylococcus aureus*. All the patients had sterile blood cultures and 14 other cultures from throat, vagina, stool, urine and cerebrospinal fluid were negative for *Staphylococcus aureus*. Not one patient had a single pathogenic organism in common.

Patient 1 was a young male who had a rather typical course of TSS. His younger sibling, also a male, had a febrile illness at the same time. The sibling developed severe myalgia that required a narcotic for relief. The sibling's CPK was over 5,000 u. He was left untreated and recovered without incident. Shortly after both were convalescing their mother developed an influenza-like illness and also recovered without treatment.

Patient 4 was with a group of peers, some who became ill at the same time as she. Their illness was mainly characterized by pharyngeal pain and fever. At least one had a throat culture at our clinic and it was negative for pathogenic bacteria.

While at this time we support, in practice, the belief that TSS is probably caused by *Staphylococcus aureus* we also believe that some other organism may be, at present, overlooked. This organism might be one that is normally found on body surfaces that under the circumstances of



menstruation and tampon usage might become pathologic. One must also consider the outside chance that surface viral colonization or systemic viral infection could be a possible cause for TSS.

It appears the best indicator for early detection of TSS is a high index of suspicion of a febrile menstruating female who appears with the symptoms discussed and who can clinically be described as "toxic."

We suggest that creatinine, platelet and prothombine levels be monitored during the course of TSS as our patient material suggests these studies become abnormal when shock occurs.

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# ANATOMY IN ARKANSAS' MEDICAL COLLEGE 1879-1979

## The History of a Department Part 1 — Where\*

Horace N. Marvin, Ph.D.\*\*

### INTRODUCTION

Formal medical education began in North America with the opening of the Medical College of Philadelphia in 1765 (later to become the Medical Department of the University of Pennsylvania), and the Medical Department of King's College in New York City in 1768. The University of Edinburgh provided the model for these first two schools<sup>1</sup>. They and schools appearing for a number of years later served as supplements to apprenticeships, the only medical training available to those who could not finance their formal education at Edinburgh or elsewhere in Europe<sup>2</sup>. Admission to these earliest schools, as described by John Morgan, co-founder of the Philadelphia school, required: an apprenticeship of at least three years; education in the liberal arts, mathematics, and natural history; and a working knowledge of the Latin language. Enrolled students studied required courses in a prescribed sequence, and their performances were graded (referred to as the "graded curriculum").

In contrast, more than a century later the Medical Department of the Arkansas Industrial University opened its doors in 1879 to "afford the young men of the state and surrounding country, facilities for the study of the science of medicine, and all its collateral branches, at home, without the great expense incident to long distances of travel"<sup>3</sup>. There were *no* admission requirements<sup>4</sup>, and the graded curriculum was optional, and remained so for a number of years. From this meager beginning, with self-generated financing and fluid administrative structure, we now have a multimillion dollar facility occupying a number of acres, the University of Arkansas Medical Sciences Campus. It is the purpose of this paper to describe the development of one unit located

on this site, the Department of Anatomy of the College of Medicine.

### WHERE

#### West Second Street

During its first one hundred years, the medical school has been translocated four times. Its initial site at 113 West Second Street was a three-story building standing on the south side of the street facing north. From fig. 1 it would appear to be



Figure 1.

The first building occupied by the Department of Anatomy, 1879-1890. Located at 113 West 2nd Street, the Sperindio Hotel building was purchased for \$5,000, remodeled, equipped and opened 7 October 1879. The 1979 location—a parking lot. From an etching appearing in the Second Annual Announcement of the University of Arkansas Medical Department.

\*This is the first of a four part article. This month is entitled "WHERE"; next month will be entitled "WHAT".

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a rather narrow building, but having high ceilinged rooms. The artist's conception places the name, Medical Department 1879, appropriately under the major arch. Conveying a non-existent affiliation with the Arkansas Industrial University, the incorrect name, Arkansas University, appears over the crest of the building. The sketch shows the left side of the building paralleling some sort of a thoroughfare. Since the number was 113 on West Second Street, this places the building on the west side of the alley since buildings in this position are numbered 113 today. The site is now a parking lot.

In the first bulletin to be issued, the building is described as "a very commodious and comfortable building. . . . It is conveniently situated, and while modest and unpretending (sic) in appearance, is well adapted for all purposes of practical instruction." Subsequently the brick building with an iron and stone front was purchased for \$5,000<sup>6</sup>, and was remodeled internally so that it was more suitable as an educational building. "It has one of the best arranged dissecting rooms in any institution of similiar character, well ventilated, with all the modern conveniences." A search for a floor plan has been unsuccessful, but it is a reasonable presumption that the dissection laboratory was located on the third floor. There were described two amphitheatres for lecture purposes, and there must have been several assorted small rooms for purely utilitarian purposes. This building served the needs of the school with variable degrees of success for eleven years.

#### Second and Sherman Streets

As the enrollment increased, the need for larger quarters became apparent. Commitments were made for construction of a new building, but tardy completion delayed occupancy until 5 November 1890. The new building again was three stories in height, constructed of brick, and located at Second and Sherman Streets. It faced Sherman Street on the northeast corner of the intersection. As shown in fig. 2 the building was properly inscribed A.I.U. (Arkansas Industrial University), with "Medical Department" subtending the acronym. Although a floor plan has not been found, it included "a large lecture hall, fine amphitheater . . . , a library, a reading (room), a museum, several private and elegant dissecting rooms; all well lighted and ventilated." The photograph reproduced in fig. 3 does indeed show a room with

rows of seats, rather elegant for those times. No provision was made initially for anatomical courses other than gross anatomy.

As early as 1908, the need was recognized for expanded facilities to meet the needs of a growing curriculum and an increasing enrollment. The



Figure 2.

The second building which housed the anatomy department, 1890-1912. Located at Second and Sherman Streets, the building was designed and built for the Medical Department. From a photograph in the Annual Announcement and Catalogue of the University of Arkansas Medical Department, 1906-1907.

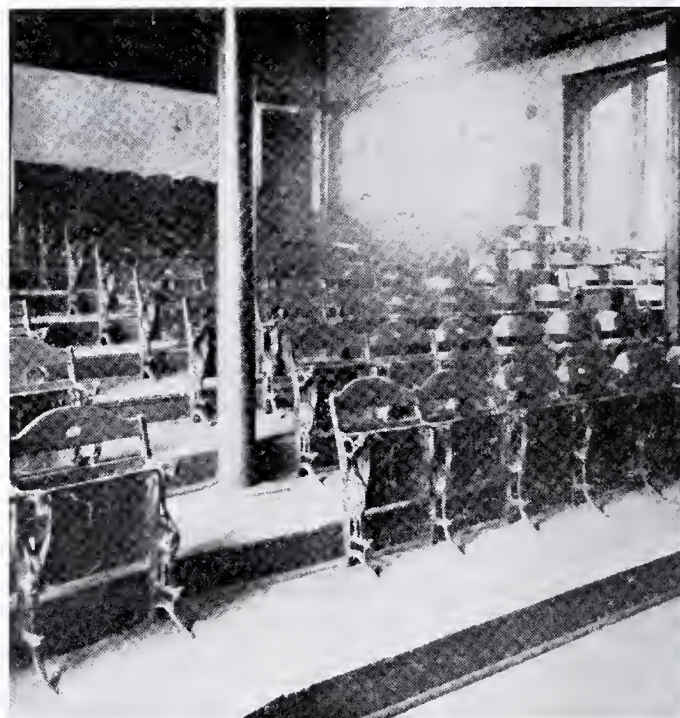


Figure 3.

Interior of a lecture hall in the second medical school building at Second and Sherman Streets. There are seven seats per row in the center section, and three seats per row in the side sections. The podium centrally placed in the room stood just out of the picture at the lower right. From a photograph in the Annual Announcement and Catalogue of the University of Arkansas Medical Department, 1906-1907.



bulletin with announcements for 1908-09 carried the statement, "The City Council of Little Rock has *made* an appropriation for a new city hospital, to be known as the 'Logan H. Roots Memorial Hospital', which will be built in conjunction with a new modern building of the Medical Department, and the new building for the Folsom Clinic. As all of these buildings will be practically under one roof the student will have unexcelled advantages in the clinics and laboratories. The cost of the new Hospital and Medical Department with the Isaac Folsom Clinic will be between \$80,000 and \$100,000, and the work will be pushed to completion as rapidly as possible." In 1910, however, the urgency was alleviated somewhat by the acquisition of an additional building on Markham Street adjoining the City Hospital. These new quarters provided laboratory space for physiology, pathology including histology, and bacteriology including clinical microscopy. Prior to this time these courses had not been taught, or had no laboratory work associated with them. Although no reference to research by any individual or group during this period has been found, the bulletin for 1909-10 includes a reproduction of a photograph of the "Research Room" (fig. 4). The equipment illustrated implies chemical, histologic, gravimetric and sterilizing capabilities. This suggests that its availability was unrestricted, but no evidence of its productive use has been found for this period. Moreover, whether it was located in

the Sherman Street or the Markham Street building is not clarified. Events soon to follow undermined further the need for expensive *new* construction, so those administrative dreams faded away.

#### First State Capitol Building

With the completion of parts of the present State Capitol about 1911, some of the governmental offices housed until then in the First State Capitol Building (fig. 5) were able to translocate. Thus in 1912 the space previously occupied by the Commissioner of Agriculture, the Supreme Court and its Library, Office of the Supreme Court Justice, and Committee Rooms of the Legislature were vacated in the initial phase. This permitted the necessary remodeling and refurbishing of both floors of the East Wing for occupancy by "the laboratories of Chemistry, Embryology, Histology, Physiology, Pathology, Bacteriology, Clinical Microscopy, Surgical Pathology and Pharmacology and Gross Anatomy dissecting rooms." During the subsequent years, the Medical Department expanded by gradual migration into the Central Building and the West Wing. In the publication, *Arkansas' First State Capitol 1885-1917*, compiled by Ned Shank, the detailed chronology of occupancy of various rooms is ably portrayed. Because there are physicians practicing today who attended classes in this building the floor plans of the 1928-35 period are presented in fig. 6 and fig. 7. These floor plans are simplifications of



Figure 4.

Here is reproduced a photograph of the "Research Room" in the building at Second and Sherman Streets. From left to right around the room: a vertical style autoclave on the floor; on the bench: a chymograph drum, a microscope, bacteriological incubator, microscope, paraffin embedding oven, beaker with culture tubes, and a lantern-slide projector. On the bench at the right there are 10 or more microscopes. From a photograph in the thirty-second Annual Announcement and Catalogue of the University of Arkansas Medical Department, 1910-1911.





Figure 5.

The front of the center portion and most of each of the two wings of the First State Capitol. The grounds were poorly tended, and paint was badly peeled at the time of this picture, but the statuary is shown. The statuary was removed subsequently as part of the "restoration" process. From a print furnished by the Arkansas Commemorative Commission—Old State House.

the 1928 electrician's plan referred to by Mr. Shank, but with minor modifications suggested by alumni who studied and/or taught there.

With these floor plans it is possible for the first time to determine space allocations. Because clinical and preclinical functions were geographically separated at this time, only the relation of space for anatomy to total basic science space will be considered for this and subsequent buildings.

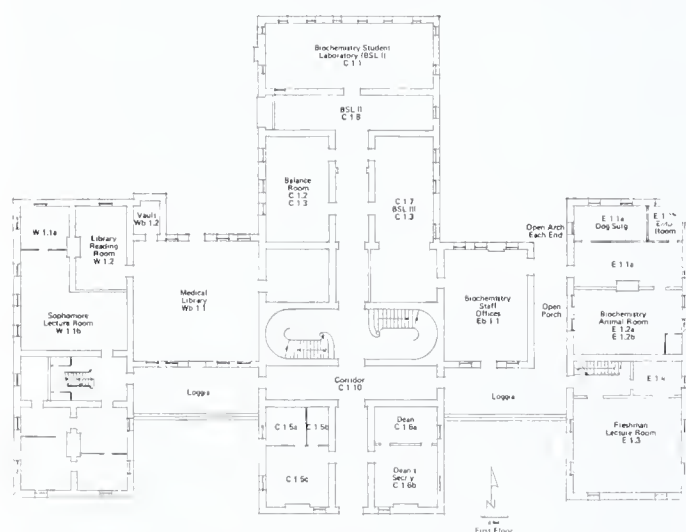
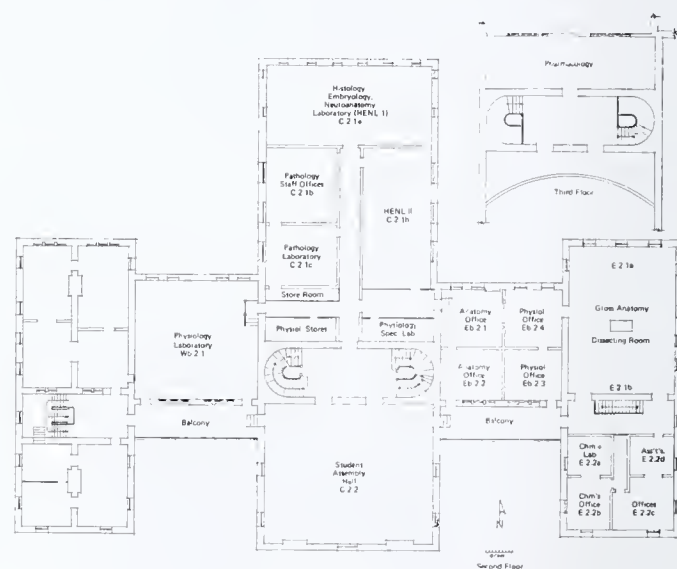


Figure 6.

Plan of the first floor of the First State Capitol as it was arranged during 1928-1935, the latter part of the period it was occupied by the medical School. BSL-II and BSL-III are Biochemistry Student Laboratory II and III, respectively. Cadavers were stored in the cellar under Biochemistry Student Laboratory I (BSL-I), brought out through a door on the north side of the cellar, carried to the open arch on the east wing, along the porch to door at east end of the loggia, then up the stairs behind the Freshman Lecture Room to the Dissecting Room on the second floor. Redrawn by the author from blueprints on file at the First State Capitol building.

From Table 1, the 5,204 sq. ft. allocated for use by students and staff in anatomical studies was 39% of the total space allotted basic sciences for laboratory teaching, lecture rooms, staff offices, and laboratories. This percentage declined over the years as the other sciences developed with consequent increase in their role in the curriculum. Also to be considered is the fact that Histology and Embryology were not considered part of the anatomical curriculum until late in this period.

The laboratories were austere and penurious





but practically adequate. Heating during the winter was notoriously poor, requiring warm clothing generally, and overcoats during the most severe part of the winter. Figures 8, 9 and 10 reproduce photographs of the Gross Dissecting Lab (casual), the lab obviously formally posed, and the Histology Laboratory similarly on good behavior. All of these photographs were made during the period 1916 to 1925. A replica of a dissecting table was made to scale by the author for an historical exhibit during the 1978-79 Centennial Year (fig. 11). A few such tables were still to be found as "extras" in the dissecting room on McAlmont St.



Figure 8.  
Reproduction of a photograph of the Gross Anatomy Laboratory taken in the First State Capitol building. This could be termed an unrehearsed "candid shot", evidenced by the hatted student and the uncovered and unattended tables with cadavers evident. From the 1924 Caduceus.

They were constructed of wood, and the top was depressed, covered with thin sheet zinc. A bucket hung under the center caught and contained excess fluid.

Some uncertainty has existed regarding cadaver storage. Bulletins mentioned repeatedly that the dissecting room was "equipped with suitable tables and stools, an injecting apparatus, and tanks for storing special dissections and partially dissected parts." The tanks mentioned in the latter part of the above statement have led some to conclude that the principal cadaver storage tanks

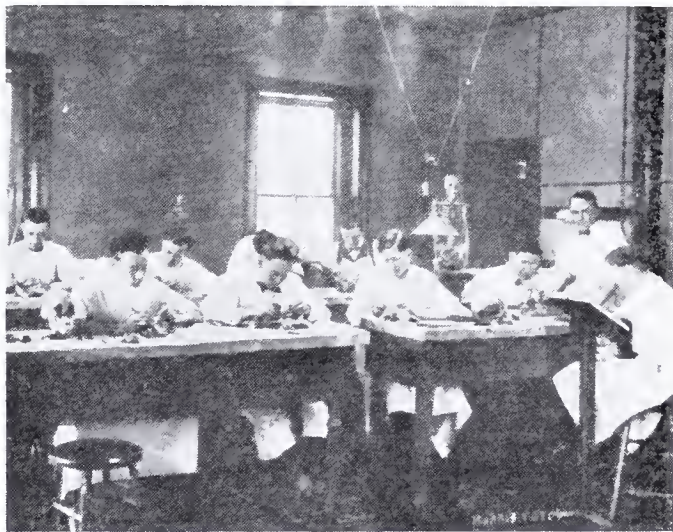


Figure 9.  
A study session in osteology as part of Gross Anatomy utilizing the dissecting tables in the Gross Anatomy Laboratory. Also from the 1924 Caduceus.

TABLE 1.  
PROPORTIONATE SPACE UTILIZATION  
Preclinical Departments

	Square Feet		% Anatomy	Average No. Students each yr. for period		Sq. Ft. Space/Student	
	All Depts.	Anatomy		First Yr.	Both Preclin. Yrs.	Anatomy	Preclinical
Old Capitol							
1912-1935	13,457	5,204	39	56 <sup>1</sup>	98 <sup>1</sup>	93	139
McAlmont							
1935-1958	27,653	9,586	35	86	160	111	173
West Markham							
1958-1968	60,441	13,136	22	102	187	129	323
1968-1976	72,180 <sup>2</sup>	15,160	21	117	227	130	318
1976-1979	69,721	23,709	22	135	262	176	407
	37,014 <sup>3</sup>						
	106,735						

1. Data includes space used departmentally only, and jointly used space counted in both categories. Floor plans were used to obtain space figures for Old Capitol and McAlmont sites.
2. Data from 1974 Accreditation Report.
3. Data from Director of Educational Resources, James W. Woods.
4. Based on years of full utilization, excluding years of World War I.



were, indeed, in the dissecting room. This was not the case, however, because their location in the basement of the north end of the central building has been verified. Mr. Austin O. Metzger, custodian of the building from 1946 to 1950, verified this location in an interview with Michelle Wasson, Historian for the First State Capitol Building. This was a reasonable arrangement, and compatible with the location of the back entrance, the first floor east embalming room, and the dissecting room at the head of conveniently located stairs. Such an arrangement would be compatible with factual or fancied stories of surreptitious acquisition of bodies by students.

During this period from 1912 to 1935, the number of entering freshmen varied from a low of 4 in 1916 to a high of 61 in 1930. During the years of World War I, the enrollments were understandably small, and students nowhere near sat-



Figure 10.

The Histology Laboratory is shown here, reproduced from a photograph which appeared in the *Arkansas Razorback*, 1916 edition. Although the instructor standing at the back was not named, the resemblance to Dr. Brookover is convincing, and he was Professor of Histology at that time. From the 1916 *Razorback*.



Figure 11.

A model of a dissecting table made to scale by the author. These tables could be made locally, requiring no special tools except for the sheet zinc tops with soldered joints. One table with turned spindle legs is seen in figure 8, but most were made with square legs of finished 4" x 4" stock.

urated the space and facilities available. Later during the period of 1925-1934, however, students were plentiful and the freshman enrollment for that period was 56 on the average. This yields nearly 100 square feet for each student. This concentration, it was clear, could not long prevail if enrollments were increased. Compounding this problem, provision for faculty research was totally inadequate, a deficiency that had gone unnoticed by the accreditation teams of the American Medical Association and the Association of American Medical Colleges.

### Thirteenth and McAlmont

The 1921 Legislature, responding to the post-war climate, renamed the First State Capitol Building as the Arkansas State War Memorial. The Board that the legislation also created had, among other responsibilities, the custodianship of those parts of the First State Capitol not being occupied by the medical school. A growing urgency to complete the conversion to a war memorial and the need by the medical school for more space set the stage for yet a fourth home for the School of Medicine. In the *Bulletin's* Announcements for 1934-35, no mention was made of a building, plans for which even then were underway. A year later a very brief, constrained description of a new building was included in the *Bulletin*, and did little to convey the magnitude of the efforts which brought it about. While Dean Vinsonhaler, Senator Joe T. Robinson, and members of the state's medical profession were working diligently presenting to their respective audiences, the faculty was quietly determining needs and designing the new building. Each department was responsible for one floor, and the Department of Anatomy was assigned the fifth. The dedication with which each department planned the floor "down to the last electrical outlet" resulted in unusually well appointed and arranged facilities. The new six-story building was constructed on the Bentley estate, initially unconnected to the City Hospital. It faced City (now McArthur) Park, which by coincidence was anatomically appropriate because the first anatomical dissection in Arkansas had been performed in November 1874 by Dr. James H. Lenow in his office on the Army Post grounds at a site easily in view of the new building. The photograph reproduced in fig. 12 shows the building after connections with City Hospital had been constructed.



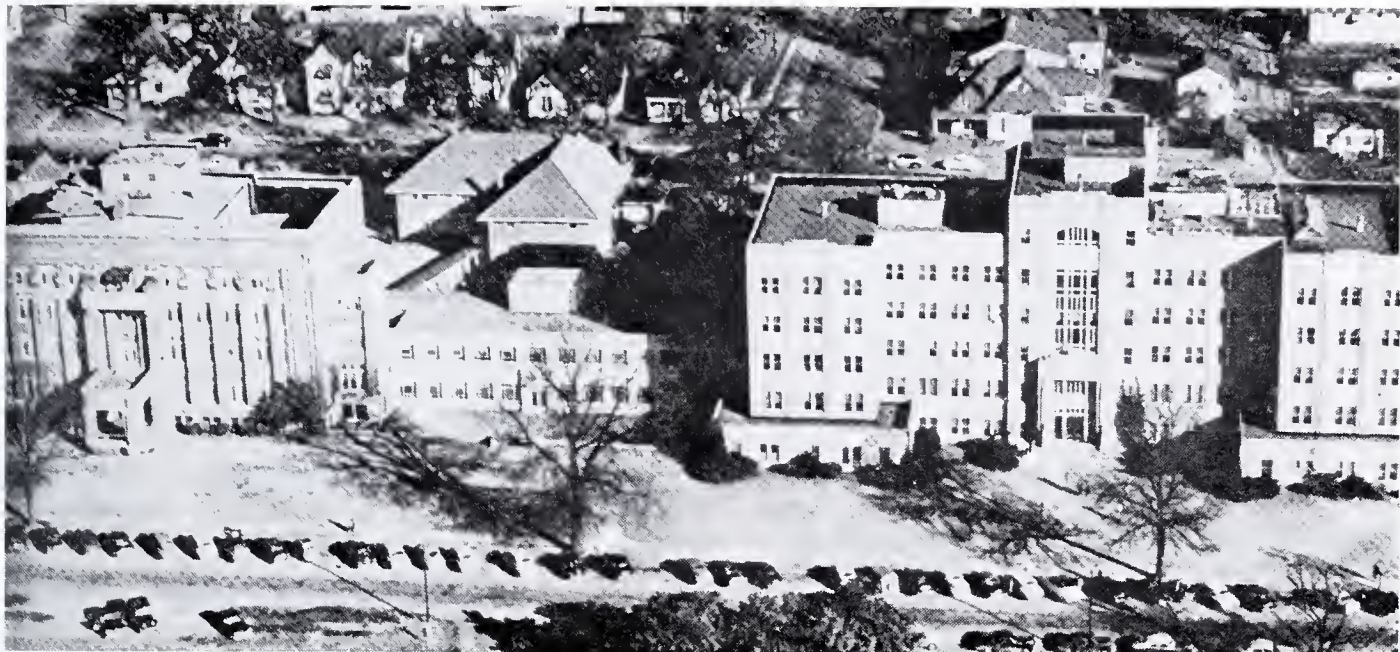


Figure 12.

In this photograph of the medical school on McAlmont Street, taken from a helicopter, the medical school is on the right and the University Hospital is on the left. The two-story connection between the two major buildings housed the Isaac Folsom Clinic on the ground floor, and the Gus Blass Blood Bank on the second floor. Reproduced from the 1953 Caduceus.

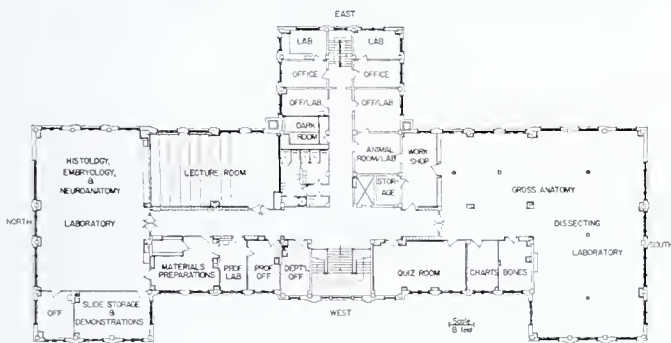


Figure 13.

A reproduction of a simplified architectural drawing of the floor plan of the Department of Anatomy as it existed in the middle 1950's. Originally the cadaver storage tanks were located in the room here labeled "Animal Room/Lab". Redrawn by the author from blueprints now at the Graduate Institute of Technology, courtesy of Mr. Richard Cochran.

The Department of Anatomy occupied the entire fifth floor; the fifth floor in the minds of students and faculty, but the fourth floor according to architectural drawings (fig. 13). The space provided in these new quarters was nearly double that enjoyed previously. Much of the increase could be accounted for by additional teaching laboratories and student support areas (see Table 2). Moreover, the space for faculty offices and research laboratories increased also. Despite the near doubling in space, laboratory facilities for histology, embryology and neuroanatomy were in-

TABLE 2.  
Department of Anatomy Space Utilization

Building & Dates	Space								Total Space				
	Class Rooms			Student Support		Staff Off./Lab		Staff Support		Students		Staff	
	Total Sq. Ft.	Area Sq. Ft.	%	Area Sq. Ft.	%	Area Sq. Ft.	%	Area Sq. Ft.	%	Sq. Ft.	%	Sq. Ft.	%
Old Capitol													
1912-1935	5,204	4,239	81	100	2	550	11	315	6	4,339	83	865	17
McAlmont													
1935-1958	9,586	6,024	63	1,343	14	1,262	13	957	10	7,367	77	2,219	23
W. Markham													
Ed I													
1958-1968	13,136	7,077	54	1,702	13	3,282	25	1,075	8	8,779	67	4,357	33
Ed I													
1968-1976	15,160	7,077	47	1,589	10	4,505	30	1,989	13	8,666	57	6,494	43
Ed I & II													
1976-1979	23,709	14,121	60	2,814	12	4,785	20	1,989	8	16,935	71	6,774	29



creased only to 74 students, as compared to 60 students enrolled in the last few years at the Old State Capitol building (fig. 14). True enough, the design was improved greatly toward efficiency and the decor and general appearance were such as to create pride in the minds of those who taught and studied there. Consistent with the new look, new dissecting tables were installed. These were fabricated entirely of stainless steel, specially made according to a design by Dr. Banks, Director of Gross Anatomy (fig. 15). There were certain errors elsewhere, however; for example, the cadaver storage tanks were located on the fifth floor in the area behind the elevator and communicating with the workshop. Detailed specifications and thoughtful design did not prevent the oil in which cadavers were stored from finding its way from the tanks to the floor and to physiology laboratories below. Since the physiologists were unable gracefully to become inured to the aroma of the aged oil, new tanks were built in the basement. Secondly, only half of the staff offices were provided with adjoining research laboratories. This deficit continued without great concern until the early forties when research activities of the staff began to increase. Subsequently the area occupied by the unused cadaver tanks was converted into an office/laboratory combination and a second room for research and small animals. This arrangement obtained until the medical school relocated westward. Thirdly, space and tables for gross dissection were provided for 136 students despite the fact that bench space for the other

three courses was limited to 74 individuals. Regardless of this apparent limitation, enrollment for the first year in the new building (1935-36) was 99 freshmen. The freshman enrollment subsequently fell below 80 students only for the two years at the conclusion of World War II. The students in excess of the 74 initially provided for, were accommodated by setting up individual small tables for them. In some years every nook and cranny was occupied effectively.

With only one major change, the physical facilities of this time continued until the move to the new medical center was accomplished. World War II imposed demands upon medical schools to produce physicians at a maximal rate. Since the facilities in the anatomy department had been used maximally for some years, only by increasing the rate of admission of classes could the output

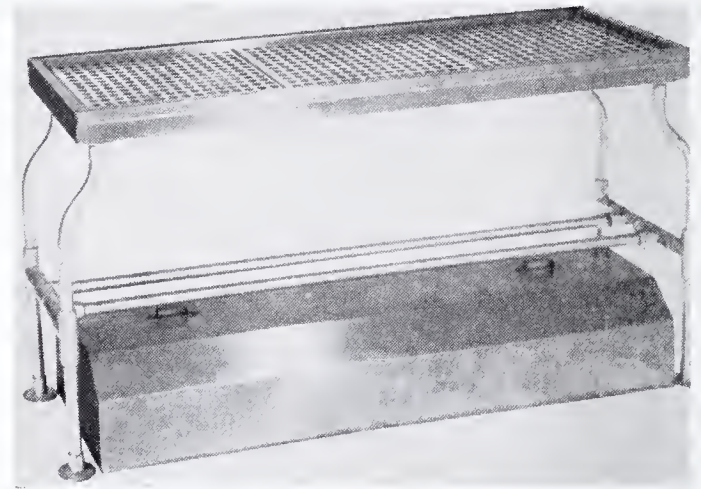


Figure 15.  
Stainless-steel dissecting table with cover as designed by Dr. Jeff Banks for the gross anatomy laboratory on McAlmont Street. Photograph of the manufacturer's model now in the department's history collection.



Figure 14.  
These two conjoined photographs appeared in the 1941 Caduceus and are the only known interior photographs of the anatomy labs at the McAlmont medical school. In the one on the left with the class at work, "Silver Bill" Langston is in the forefront and "Spider" McCullough in the back on the left. The photo on the right shows the gross lab from the north end; no instructor is evident.



be increased. The freshman class of the 1942-43 year finished the academic year in June of 1943, and in July a new freshman began its term. A new class was accepted each nine months until 1946 when the practice was discontinued. Those summer months during these years were difficult, to say the least. Mid-afternoon labs were characterized by numbers of male students stripped to the waist. The two or three female students in each class were exceptions, needless to say. Window fans were installed in both laboratories for these summer months, and these 36 and 48 inch fans successfully moved the air, with sheets of lecture notes, both student's and faculty's, hitchhiking on the breeze, and sometimes ending up outside. A few window air-conditioners were purchased personally by the more affluent faculty members. It seemed that the University Controller, officed in the cooler mountains of north-west Arkansas, could not condone the luxury of air-conditioners in Little Rock.

#### West Markham Street

The need to improve clinical teaching by providing hospital facilities of greater magnitude, modernity, and quality emerged in the late forties and took the vanguard in promoting a "medical center" for the people of Arkansas. A minor but definitely a flanking action incorporated also the needs for increased enrollments, and more facilities for faculty research. The intricacies of political maneuvering which resulted in the present Medical Center is a story too involved for this treatise. As part of the complex, an "educational building" of nine floors provided for the departments of basic medical sciences, the School of Nursing, the School of Pharmacy, and the Library (fig. 16). The Department of Anatomy was assigned the eighth floor, directly under the Animal Quarters, a disadvantage it bore until 1971. Every plea was presented to the architects to include necessary provision for containment of the fluids which certainly would reach the floor of dog pens in the quarters. This request was ignored in the name of economy, a saving which in the ensuing fourteen years was spent many time over repairing damage produced by leaks. Many students carried forward souvenir stains on text and notebooks produced by urine of various species. When the animal quarters were relocated in 1971 and the Department of Pharmacology occupied the refurbished ninth floor, the problem abated.

As initially designed, space was provided both

for a teaching laboratory for Gross Anatomy, and a single teaching laboratory for both Microscopic Anatomy and Neuroanatomy (fig. 17). A wash-room/locker room, bone storage, and workroom located in a central island, opened into the gross anatomy laboratory (fig. 18). From the other side of the island, a slide storage room and a demonstration room communicated with the micro/neuro laboratory. The demonstration room was particularly advantageous since either demonstra-



Figure 16.  
A view of the first educational building for basic sciences on the West Markham site. In the foreground on the left is the auditorium, and on the right is the "A" wing of the hospital.

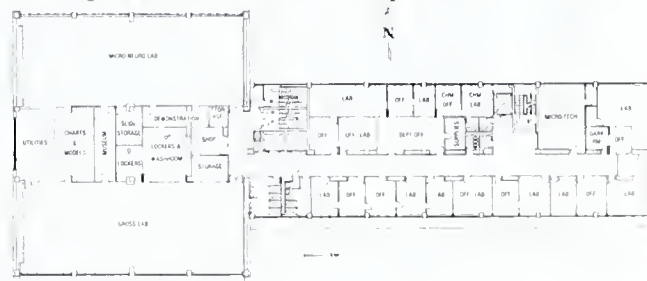


Figure 17.  
Floor plan of the department as initially designed for the educational building on the West Markham site. Redrawn by the author from blueprints in the Physical Plant Office.



Figure 18.  
A class in session in the Gross Anatomy Laboratory at the West Markham site. From the 1974 Caduceus.



tions or test slides could be set up, and students would enter one door, work down the series of microscopes, and exit through a second door. The room may well be remembered unfavorably as "the gauntlet", as it was known by many who "ran it" (fig. 19). In the micro/neuro laboratory seating space was provided for 110 students. Although only 92-95 students entered as freshmen during the first few years of occupancy, the number increased in increments of five students until 110 were being admitted during the period 1967-1971. The demand for more physicians to serve the people of Arkansas made itself felt on the administration of the Medical Center through the agency of the Legislature. This was countered administratively on the basis that teaching space was being fully utilized, and that loss of accreditation might occur if class size were increased without a proportionate increase in faculty strength. For the Department of Anatomy a method for providing space for additional faculty evolved. The laboratory portion of Microanatomy and Neuroanatomy would be taught in the pathology laboratory when it was not in use for sophomore students. In fact medical schools across the country were reviewing their priorities in the early 60's and deciding that financial constraints no longer permitted the "luxury of convenience" for each course to own its individual teaching space. This was not a popular solution in the view of the Department of Pathology, however, but finally came to fruition in the late 60's. The floor plan in fig. 17 consequently was modified and the space previously occupied by the micro/neuro laboratory converted to a departmental office and three



Figure 19.

Microscopic Anatomy class in session in the laboratory at the West Markham site. Standing are Dr. Langston in the center and the author on the right. From a color transparency, courtesy of Mr. Robert Donaldson.

laboratory/office spaces for new faculty members (fig. 20). Minor changes were made elsewhere to provide more convenient office/laboratory arrangements.

Increases in faculty strength in other preclinical departments occurred also, and beginning in the fall of 1972, class size was increased by 10 students to 121. Coincident with, but not because of, this increase in class size, one of the significant improvements in laboratory instruction was introduced. Closed circuit television for macro-viewing of obstetrical and surgical procedures had been used in the medical school for small group teaching for several years, and monitors were installed in the freshman lecture room for these sessions. Television for microscopic study was still in development, and only custom-build equipment was available. The cost was far beyond the budgetary capability of the College of Medicine at the time, although the method appeared to be especially suited for laboratory instruction in Microanatomy, Neuroanatomy and Pathology. After purchase costs finally fell to an affordable level, funds for the purchase of a color camera and accessory monitors were provided in 1972 by the College of Medicine. With the advice and technical assistance of the newly generated Division of Educational Development, the teaching staff initiated in 1972 this new educational technology. It was the first use of color television in Arkansas for viewing tissues microscopically by large groups of students. Figure 21 is a photograph of students viewing TV monitors in the laboratory.

Early in 1970 the belief in the need for larger entering classes emerged again, and the marshalling of the forces of the State Medical Society, the Legislature and the University to this end is described by Baird<sup>6</sup>. A new educational building was made possible by more than 18 million dollars allocated by the 1973 Arkansas General Assembly. The new facility (fig. 22) which opened

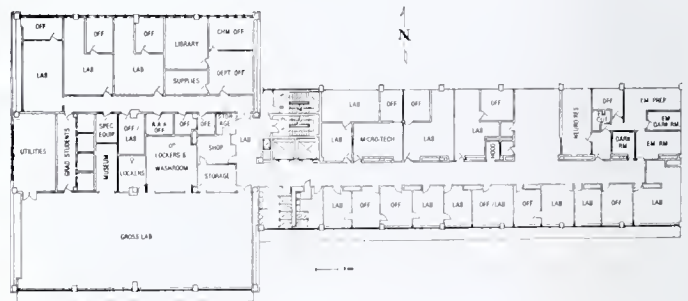


Figure 20.

The original floor plan of figure 16 was modified when the laboratory teaching of Microscopic Anatomy and Neurosciences was moved to the Pathology Laboratory. The conversion to office/laboratory space is shown here in the floor plan by the author as it presently exists.



for classes in the fall of 1976 provided multi-use laboratories for all courses of all colleges, including Microscopic Anatomy and Neurosciences as they currently are named. Four laboratory units, arranged in a semi-circle around a television studio (fig. 23), will seat 48 students in each unit when separated by temporary partitions or a class of 192 when used entirely. Adjoining the laboratories is a large storage room from which materials and equipment are issued at the beginning of each laboratory period, and to which they are returned at the conclusion. Lecture facilities are provided for anatomical subjects in one of two large amphitheatres. Each seats 192 students (fig. 24), with audio-visual facilities for slides, movies, closed circuit television, overhead projection, and chalk boards including ultraviolet fluorescent chalk. Unfortunately for the Department of Anat-

omy, the erroneous opinion was held that the Gross Anatomy laboratory could not be located in the new building without malodorously permeating the atmosphere of the air handling system. Therefore although very modern, mostly convenient, and esthetically pleasing, the new facilities had no material effect in increasing the space of the department (see Table 3). The central supply concept did, however, relieve students of the microscope nuisance problem. Although the medical school had furnished microscopes from 1910 when laboratory studies first became substantial, a change in policy in 1917 required students to furnish their own. This policy was in turn replaced when the new facilities got underway. This was a great relief to students who frequently had been forced to spend hundreds of hard-to-get dollars, and to the faculty who had



Figure 21.  
Students in Neuroscience watching one of the several monitors located in the laboratory. From a color transparency, courtesy of Mr. Robert Donaldson.



Figure 23.  
Students at work in a laboratory in the new Education Building II. Each table provides for four students, and TV monitors are distributed at critical viewing sites.



Figure 22.  
New educational building which opened in 1976, housing the Library, College of Nursing, College of Pharmacy, and many new classrooms. This building has been designated Education Building II, a rather unimaginative and impersonal name. The older educational building, seen in part just to the right now has become Education Building I.



Figure 24.  
A view of one of the two amphitheatres in Education Building II as currently used. The 192 seats are suspended on swing-out pivots and each has limited reclining capability. The block pillar at the back left contains a folding partition which can separate the room into two smaller amphitheatres.



been inspecting and certifying old and used scopes. Students now pay a small fee, less than rental fees in the 1917-1977 period, and are assured of the use of a quality scope. Examples of the three vintages are shown in figure 25.

Thus in its first 100 years, the Department of Anatomy has progressed from a place in a building purchased in 1879 for \$5,000, to participation in an educational program provided with more than 50 million dollars worth of physical facilities (fig. 26). Although the State of Arkansas has supported financially the College of Medicine and Medical Center for only the last 65 years of the centennium, that support has been generous.

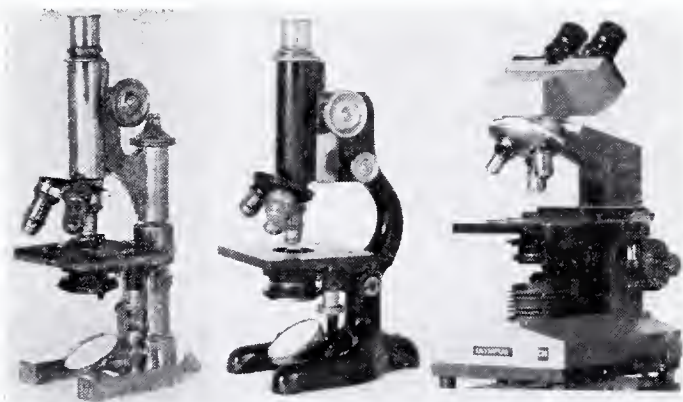


Figure 25. In this figure, on the left is illustrated a 1907, \$60-model Leitz microscope inscribed on the base "Arkansas Industrial University, Medical Department, No. 12" of a series of twenty. The photograph in the center was made of a \$500 Bausch and Lomb microscope representative of the broad period, 1917-1977. Currently used, and provided by the medical center, are microscopes such as this \$900 binocular scope.

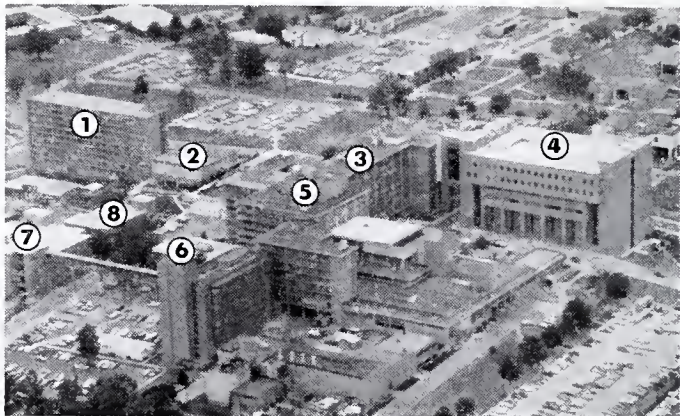


Figure 26. An aerial view of the campus looking southwesterly. 1 - Student Residence Building; 2 - Jeff Banks Student Union; 3 - original educational building; 4 - Education Building II; 5 - hospital; 6 - Barton Research Building; 7 - new ambulatory teaching unit; 8 - Child Study Center.

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TABLE 3.  
Distribution of Faculty Space

Bldg. & Dates	Total Space Sq. Ft.	Total Faculty Space		Distribution of Faculty Space											
				Office		Private Lab			Gen. Res. Support			Gen. Admin. Support			
		Sq. Ft.	%	Sp. Ft.	% of Space		Sq. Ft.	% of Space		Sp. Ft.	% of Space		Sq. Ft.	% of Space	
					Total	F'lty		Total	F'lty		Total	F'lty		Total	F'lty
Old Capitol 1912- 1935	5,204	1,110	21	400	8	36	150	3	14	---	---	---	315	6	28
McAlmont 1935- 1958	9,586	2,219	23	712	7	32	550	6	25	804	8	36	153	2	7
West Markham 1958- 1968	13,136	4,357	33	1,112	8	26	2,170	17	50	672	5	15	403	3	9
1968- 1976	17,415	6,494	37	1,536	9	24	2,969	17	46	1,162	7	18	827	5	12
1976- 1979	25,684	6,774	26	1,676	7	25	3,109	12	46	1,162	5	17	827	3	11





## ELECTROCARDIOGRAM

## OF THE MONTH

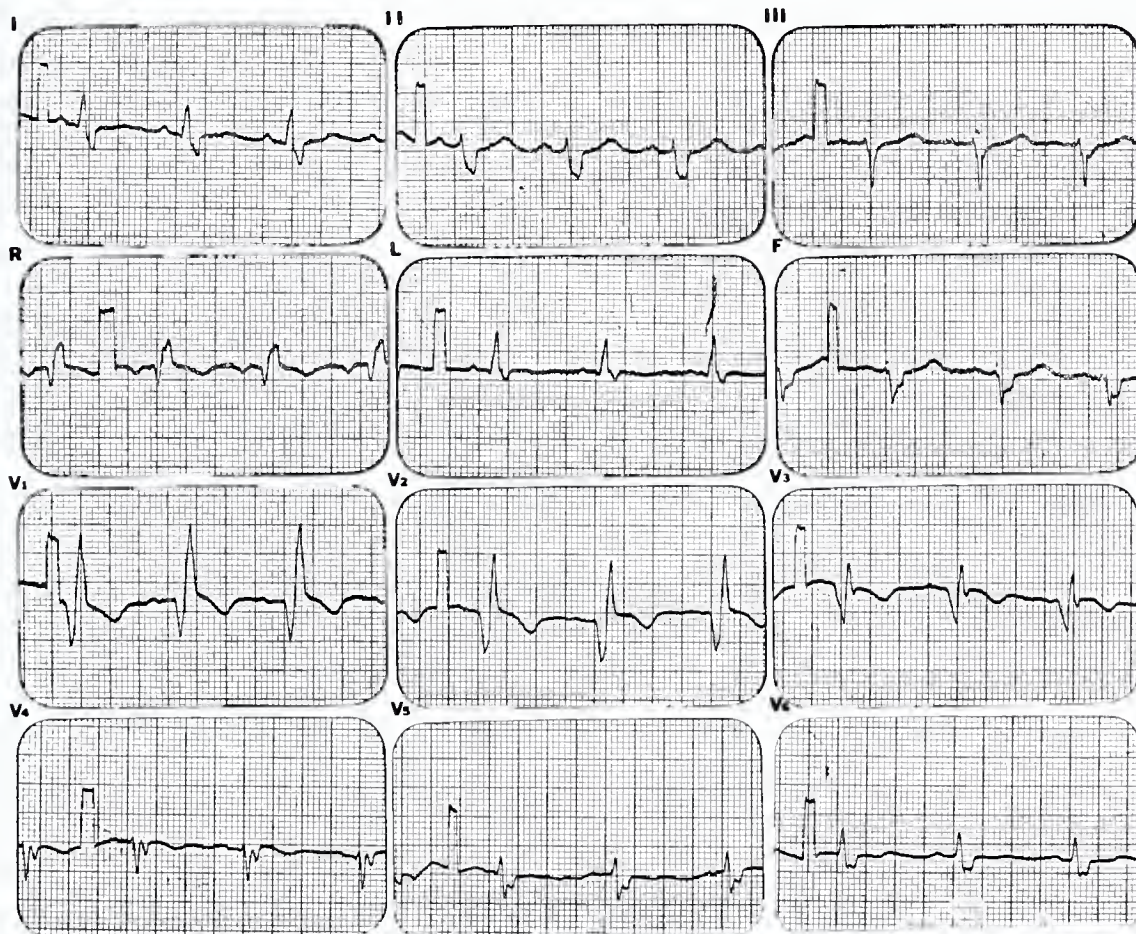
The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 269)

**HISTORY:** C. C. is a 60-year-old man who presented to the hospital because of a prolonged episode of chest pain associated with pallor, diaphoresis, and nausea. His physical examination revealed hypotension, rales, and an  $S_3$  gallop. His ECG on admission is shown below.

Based upon his presenting picture and his electrocardiogram, which of the following remarks are true?

- A. He has evidence of anterior infarction.
- B. A temporary pacemaker is indicated.
- C. A pulmonary artery catheter is indicated.
- D. Cardiac output may be low in this patient.



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 University of Arkansas for Medical Sciences  
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## "Soy Formula Induced Metabolic Alkalosis"

Watson C. Arnold, M.D.,\* and Sam L. Shultz, M.D.\*\*

The Center for Disease Control was notified in July, 1979, of the occurrence of metabolic alkalosis in three children who were ingesting a soybase formula.<sup>1</sup> Since that time, over 200 children have been identified who developed a metabolic alkalosis secondary to the ingestion of NeoMullSoy or CHO - free (Syntex, Palo Alto, Calif.). The majority of the children were between two and nine months of age. None of the children died.

The formula was found to be chloride deficient and contained only 1 to 2 mEq of chloride.<sup>2</sup> Recommended dietary allowances for chloride in infant formulas from the Committee on Nutrition of the American Academy of Pediatrics is 11 mEq/L of chloride.<sup>3</sup> This chloride deficient formula was on the market between October, 1978, and August, 1979. The majority of the severely affected children showed a decrease in weight gain and slowed height gain that returned towards normal after the chloride deficit was corrected.<sup>4</sup> The long-term follow-up of the children indicates that some of these children may have delayed developmental milestones.<sup>5</sup>

Five patients were evaluated for metabolic alkalosis from NeoMullSoy<sup>5</sup> at Arkansas Children's Hospital. Each patient gave a history of

an episode of spitting, vomiting or diarrhea after which the child was placed on a soybased formula. All the children were referred 2-4 months after the initial episode of vomiting with a history of muscle weakness, listlessness, poor feeding, and poor growth. Each child was referred by a local physician for evaluation when metabolic alkalosis was noted during an evaluation for failure to thrive.

Initial laboratory findings for this group were similar to those of Bartter's Syndrome with a metabolic alkalosis and elevated plasma aldosterone and renin levels. (Table 1.) The metabolic alkalosis was easily corrected with small amounts of potassium chloride (1-2 mEq/kg/d) for 1-2 weeks. In all cases the laboratory indices returned to normal after chloride replacement and the children returned to the previous growth curve. (Figure 1.)

Diagnosis of NeoMullSoy induced metabolic alkalosis was made in retrospect and by the exclusion of other etiologies of metabolic alkalosis.

### Discussion:

Metabolic alkalosis usually results from chloride loss and hypovolemia.<sup>6,7</sup> Contraction of the extracellular fluid volume can perpetuate the alkalosis by increasing proximal tubular sodium and bicarbonate reabsorption. Hypokalemia and excessive aldosterone secretion may contribute to the maintenance of the alkalosis. It will persist

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\*\*Director, Infant and Child Health Services, Arkansas Department of Health, 4815 West Markham, Little Rock, Arkansas 72201.

TABLE 1.  
LABORATORY DATA IN CHILDREN WITH  
METABOLIC ALKALOSIS FROM NEOMULLSOY<sup>R</sup>

Pt.	Arterial Blood Gases												Hormones									
	Bi-carb				Serum Electrolytes								Urine Electrolytes				Aldos		Renin		Sweat	
	pH	pCO <sub>2</sub>	pO <sub>2</sub>	carb	Na	K	Cl	CO <sub>2</sub>	BUN	Creat	Ca <sup>+</sup>	Mg <sup>+</sup>	Na	K	Cl	pH	pre	post	pre	post	Cort	Chloride
1	7.52	38	93	29	137	3.0	80	40	21	0.6	11.7	1.7	1	8	10	9	429	<5	30	<7	—	18
2	7.69	26	115	32	133	2.8	77	34	17	0.7	12.6	2.6	11	51	5	5	16	—	—	—	24	8.5
3	—	—	—	—	125	2.5	66	42	20	0.8	10.9	1.8	1	32	0	8	49	<6	30	<7	22	8
4	7.67	34	81	39	148	2.8	79	32	10	—	—	—	36	6	12	7	—	—	—	—	—	27

"Soy Formula Induced Metabolic Alkalosis"

# GROWTH IN CHILDREN WITH METABOLIC ALKALOSIS FROM SOY FORMULA

## BOYS

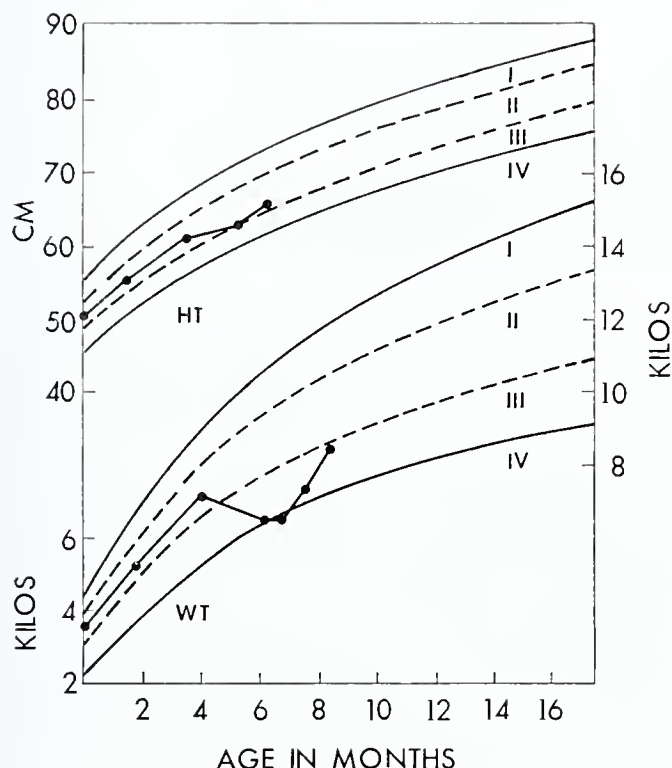


Figure 1  
-5-

until the chloride and potassium deficits are repaired. The occurrence of these cases caused by the ingestion of a low chloride formula emphasizes the importance of volume replacement with chloride containing fluids during episodes of vomiting and diarrhea. A chloride deficit may persist even in mild cases of vomiting if oral chloride intake is restricted.

We hypothesize that hypochloremia and metabolic alkalosis may have been present during the interval between the initial vomiting episode and the subsequent discovery of the electrolyte abnormality. Renin and aldosterones were elevated in most of the patients and returned to normal with a chloride replacement. Hypercalcemia was present in three of the patients though serum phosphorous was normal and serum magnesium was at the lower level of normal.

There is currently a trend in medicine to recommend a low sodium content in infant foods to

prevent the later development of hypertension. The occurrence of metabolic alkalosis in these patients emphasizes the fact that there is a minimal amount of sodium and chloride that must be ingested daily in order to ensure growth in children.

The findings of minimal brain dysfunction and learning disability in some of these children are troublesome. Whether these children will be significantly hampered in school has not yet been determined. The reported abnormalities are similar to those found in patients who have recovered from protein-calorie malnutrition and may be a reflection of decreased caloric intake rather than direct CNS injury. An evaluation to determine if a child may have been affected by ingestion of a chloride deficient soy formula is available through the Arkansas State Department of Health or Arkansas Children's Hospital, Nephrology Clinic.

Several groups are presently conducting long-term investigations of the children who had documented metabolic alkalosis from the low chloride formulas and referral is available on request. The centers include the Center for Communicable Diseases in Atlanta, Bureau of Epidemiology, Atlanta, Georgia 30333, or Dr. Shane Roy, Department of Pediatrics, University of Tennessee Medical Center, Memphis, Tennessee.

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## EDITORIAL

# Lawley, James, and Jones in Circulating Immune Complexes

Alfred Kahn, Jr., M.D.

It has been known that immune processes may relate to clinical disease for about 75 to 80 years. Serum sickness was the first immune disorder extensively studied by the medical profession. In the more recent past, there has been a great deal of information in the medical literature about immune processes and certain specific illnesses. A great deal has been written concerning immune processes and kidney disease. Probably the next most significant advance was the discovery that circulating immune processes could relate to many organ systems.

Lawley, James, and Jones have recently published an interesting review entitled "Circulating Immune Complexes: Their Detection and Potential Significance in Some Hepatobiliary and Intestinal Diseases." To them the term immune complex means the combining of a specific antibody to an antigen; this is without reference to the type of immune globulin — and the antigen may be from outside the body or inside the body. The authors point out that when an antigen and an antibody combine to form a complex, serum complement fall sharply. At the time that the antigen and antibody form the immune complex, tissue damage may occur in certain target sites depending on the nature of the complex.

Lawley, et al, reports that the immune complexes seem to attach to tissues by means of vasodilatation associated with separation of endothelial cells — possibly resulting from the release of histamine or other vasdilating agents. Neutrophils are attracted to the site of attachment of the immune complexes. The neutrophils release destructive enzymes which tend to damage nearby tissues. Some immune complexes may attach to circulating cells as lymphocytes, in addition to

fixed tissue cells. These "conditioned" lymphocytes may play some specific role in cytotoxicity, etc.

The assay circulating immune complexes can be done by several methods; the authors describe five techniques. Non-specific assays are reported — and they are somewhat insensitive. Complement — Protein interactions are reported to be accurate. Reactions with antiglobulins are successfully used. Complement receptor reactions are said to be highly accurate and reproducible. Lastly, Fc Receptor dependent reactions are used.

Lawley, et al, brought up an interesting point with regard to normal individuals, namely that normal humans may produce immune complexes occasionally — probably this is a very short lasting phenomenon when it does occur. Immune complexes are cleared from the circulation by the reticulo-endothelial system — and the larger complexes are taken out of the blood stream faster than the smaller ones. Apparently, in experimental animals, more immune complexes can be given than the reticulo-endothelial system can remove — and thus the tissues could be the site of deposition of the immune complexes — where damage could be done.

The authors report that in hepatitis B virus infection, there are symptoms which suggest that circulating immune globulins have been formed including joint pain rashes; vasculitis and glomerulonephritis may relate to hepatitis B surface, Antigen anti-compliment activity is said to be present in acute hepatitis type B disease; there are other evidences too of circulating immune complexes. Certain patients with chronic hepatitis have circulating immune complexes. Hepatitis A may be associated with circulating im-

immune complexes but their role in producing is totally unknown. The same is true of non-A non-B hepatitis.

So-called H.B.<sub>s</sub>A<sub>e</sub>-Negative chronic active hepatitis has been studied to determine if immune complexes play a role in its induction and perpetuation; the results are unclear; there seems to be some reasons for anticipating a role of immune complexes in H.B.<sub>s</sub>A<sub>e</sub> Positive hepatitis. In chronic biliary cirrhosis, there are higher levels of immune complexes than in any other type of liver disease; these immune complexes are thought to bear a relationship to actual tissue damage.

Lawley, et al, report that in ulcerative colitis, there are large quantities of circulating immune complexes. The presence of extra hepatic lesions as arthritis, ureitis, skin disorders, etc., add credence to the belief that the immune complexes have an important role. They report that the

level of immune complexes parallel disease activity and extra intestinal signs of the disease. In Crohn's Disease, similar findings have been made.

Two somewhat unexpected disorders discussed by the authors were celiac disease and intestinal bypass syndrome. The relationship of immune complexes to celiac disease remain unclear. Immune complexes have been found in cases of intestinal bypass who have arthralgia.

In closing, Lawley cautions that although immune complexes may be present in some gastrointestinal disease, it is not certain that the immune complexes produce the disease — or if they are a so-to-speak by-product variation in the level of the serum immune complexes do not necessarily mean enhanced production but could mean decreased removal. This is an interesting area of immunology and may through better understanding enable us to control these serious disorders.

## "From Other Years"

(From UAMS Library, History of Medicine Archives Division.)

*Arkansas Medical Monthly*

Vol. I No. 1 April, 1880 p. 42

The sanitary condition of this city is extremely bad, and if early efforts are not made toward improving it, the coming summer will certainly bring some pestilence upon us. Almost any of our alleys joining or near the business streets would prove an irresistibly inviting 'hot-bed' for the propagation of an epidemic.

\* \* \* \*

Some of our medical friends are advancing conjectures as to the probability of striking hot water by the artesian well borers now at work in this city. It would be quite unfortunate to have their anticipations realized. Uncle Sam would institute suite for possession of the property at once, and he is invincible in law. Besides, the supplies of our sister city, Hot Springs, might thus be cut off and she left upon cold water.

\* \* \* \*

p. 43

The citizens of Little Rock are very much disturbed about the payment of the sanitary tax assessed against them by the city authorities to meet the quarantine expenses of last year. The various expenses incidental to the protection of our city from an epidemic have been compara-

tively small, but the question of meeting them has nevertheless proven quite a disturbing element in our midst. Our connection with the quarantine interests of the state and city for the last two years has placed us in a position to embrace many ideas of practical import upon the subject. In fact, their adoption by the health authorities would relieve us in future of all financial embarrassment in the premises; and we apprehend that to all thinking and unprejudiced minds they will carry a conviction of right. Should the occasion arrive which demands it, we intend to express ourselves upon the subject.

### ANSWER—Electrocardiogram of the Month

**DISCUSSION:** The patient has presented with history suggestive of myocardial infarction. His ECG reveals sinus rhythm, right bundle branch block, left anterior fascicular block, and Q-waves in V<sub>1</sub>-V<sub>3</sub>; plus loss of R-wave progression in the chest leads suggestive of anterior infarction. There is said to be a 46% rate of progression of RBBB and LAFB to complete heart block when seen acutely with myocardial infarction and many authorities recommend temporary pacing. Since the infarcts that result in this much conduction disturbance may be very extensive, the patients may well experience low output states and with physical evidence of cardiac failure, pulmonary artery catheterization may yield clinically useful information. Thus, all the remarks are true.



## MEDICINE IN THE NEWS



### THE MONTH IN WASHINGTON

In the Congress' mad rush to recess and get out on the hustings it has paid little attention to specific health related legislation. The budget reconciliation process has imposed added strain to a system now groaning under the weight of trying to do too much in too little time. As a result many measures of importance to medicine may die on the vine.

\* \* \* \*

In the face of opposition from many in the medical research community, the House has easily approved historic legislation greatly extending Congress' control over the federal medical research effort at the National Institutes of Health (NIH).

The National Cancer and Heart and Lung Institutes, formed during the past decade, are subject to the Congressional authorization procedure, but the rest of NIH has remained unencumbered. As a result, the health subcommittees of the Senate Human Resources Committee and of the House Commerce Committee have not been able to exert the type of oversight and control of NIH activities that are enjoyed by most non-appropriations committees.

Many researchers have feared that authorization authority could lead to more political dabbling in NIH activities and possible restrictions on funding.

In an effort to meet these objections, the House bill allows authorizations to be provided for an additional year automatically if program extensions unavoidably are delayed; and sets up an overall authorization of \$100 million to assure that unexpected breakthroughs in research would not be impeded by limits in authorization levels.

Although the appropriations committees have great leeway in voting funds, they are limited by law from exceeding authorization levels established by the other committees in Congress.

The issues raised by the legislation were serious enough for opposition to be registered by four former assistant HEW Secretaries for Health, four previous directors of NIH, the American Associa-

tion of Medical Colleges and the Association of Professors of Medicine, among others.

However, supporters of the bill, led by Commerce Subcommittee Chairman Rep. Henry Waxman (D.-Calif.) and ranking GOP member Tim Lee Carter, M.D. (R.-Ky.), noted that the Surgeon General and current Assistant Secretary for Health, Julius Richmond, M.D., and Donald Frederickson, M.D., director of the NIH, have indicated their backing of the measure.

But Capitol Hill observers believe there is little chance differences between the Senate and House version of the bill can be ironed out in the rush to recess. Nonetheless, sponsors of the controversial legislation promise they will be back with the same proposal in the next Congress.

\* \* \* \*

The government has opened a pilot program of requiring drug manufacturers to provide patient package inserts for 10 drugs or classes of drugs. The purpose is to determine whether such inserts are a good way of informing the public and whether more drugs should be covered.

Pharmacists will provide the leaflets when a prescription is filled initially.

The drugs involved are ampicillins, benzodiazepines, cimetidine, clofibrate, digoxin, methoxsalen, thiazides, phenytoin, propoxyphene, and warfarin.

The three-year program will cost an estimated \$21 million a year which will be borne by the manufacturers. Each pamphlet will cost about 18 cents, a cost that will be reflected in the cost of the drug. The Pharmaceutical Manufacturers Association said the federal action is "an important first step" toward the objective of getting meaningful information to the consumer.

The "inserts" will describe what the drug is for, what side effects may occur and how to take the drug properly to get the most benefit. The leaflets — scheduled to be available in pharmacies by mid-1981 — will also be available to hospitals and nursing homes.

The drugs chosen for the pilot program include some of the most frequently prescribed, including

the benzodiazepine category of tranquilizers which numbers librium and valium among the familiar name brands. About 16 percent of all new prescriptions would be affected.

Health and Human Services Secretary Pat Harris told a Washington, D.C., news conference that many of the six million cases of adverse drug reaction could be prevented or minimized by giving patients more information about their prescription drugs.

During the evaluation period, the FDA will permit the testing of alternative methods such as having drug information available in a book at the pharmacy.

Under the benzodiazepines, the guideline insert includes both a statement that special precautions apply to the use of the drug in elderly patients and a statement about the risk of the patient developing a dependence on the drug. These drugs should not be used to treat anxiety or tension due to the stress of everyday life, the leaflet says. It cautions against using alcohol while taking the drugs.

Warning on dependence and use of alcohol and other drugs are also featured in the propoxyphene insert. Advice is given in case of an overdose.

Caution against exposure to sunlight is given for methoxsalen.

Patients taking phenytoin are urged to watch out for signs of toxicity. A similar warning of toxicity is included for digoxin.

Clifibrate may increase the risk of having gall-bladder trouble or getting tumors, according to the leaflet. Regular blood tests are urged.

Warfarin can dangerously interact with other drugs, even aspirin, patients are notified. Physicians should be told of unusual bruising or bleeding.

In a rule published in the Federal Register September 12, FDA set forth the new requirements and published draft guidelines for the ten patient package inserts.

\* \* \* \*

The American Medical Association has told Congress the National Health Service Corps (NHSC) program should not become the primary means of financing medical education through federal scholarships. At the same time, the AMA supported the goals of the program in providing medical personnel to "truly underserved" areas.

Joseph Boyle, M.D., vice chairman of the AMA Board of Trustees, told the Senate Labor Sub-

committee on Health that the AMA sees problems with the Corps in the designation of shortage areas and in the placement of corps personnel. "A significant step to alleviate these problems would be to allow input in the placement of corps personnel from local medical societies," Dr. Boyle said.

Such input could also have the advantage of increased cooperation between practitioners and work to increase the retention rate of corps personnel in the communities where they are placed.

Dr. Boyle said that as more studies are completed it will be easier to plot the future of the corps. Until such studies are completed, there should be no increase in the number of NHSC scholarships, he added.

"For the corps to be most effective, it must work as an adjunct to the physician in private practice," said Dr. Boyle, "only through the proper allocation of corps personnel will health manpower shortage areas be eliminated."

\* \* \* \*

The Senate has passed and sent to an uncertain fate the health education assistance bill which discontinues the present capitation aid program for medical schools.

The bill, which had been dangling for months, was approved with only brief comment and by voice vote.

The House-passed medical education bill is substantially different, proposing a three-year phase-down of capitation aid, among other provisions.

The Senate measure proposes a new national priority incentive grant program starting in fiscal 1982 under which schools which undertake certain projects — such as conducting a certain percentage of clinical education in shortage-areas — would receive grants amounting to \$250 per student.

The shortage of time left before the election recess may cause the final congressional disposition of the bills to be put off until a lame duck session after the elections or the legislation may be shelved for this year with a continuing resolution to keep education funds flowing at their current level for another year. In this event, the new Congress would have to tackle the issue again next year.

\* \* \* \*

The House has passed legislation protecting news media offices from arbitrary searches for



evidence by federal officials. The measure also calls for the Attorney General to draw up guidelines to prevent such search warrants where they would intrude on the confidential relationship between physician and patient and attorney and client.

The AMA had urged that the bill, similar to one approved by the Senate earlier, cover the medical profession as well as the news media in the mandated protection. However, the bill's backers decided to limit the protection to the first amendment — freedom of speech — area.

The Supreme Court of 1978 broadened the scope of search warrants against innocent third parties by imposing a standard of "reasonableness" in a decision that sparked a flood of protest from the news media. The case stemmed from a police search of the files of the Stanford U. newspaper.

The legislation essentially would overturn the decision as it applies to the press.

All of the witnesses at the hearings, including the press, urged that the protection be extended to all innocent third parties, but the Justice Department expressed reservations about such an extension beyond the news media.

\* \* \* \*

The Committee for National Health Insurance, a labor-dominated outfit formed to push the labor NHI plan eleven years ago, is about to go out of business unless labor leaders decide to resurrect it.

The head of the committee since its inception, Max Fine, has left to form a company to establish and administer self-insurance health plans for companies.

The committee, which still exists on paper, consists of about 100 people prominent in unions or in health. Douglas Fraser of the United Auto Workers is president.

During its heyday, Fine and the committee were active in testimony and public appearances touting the broad labor NHI plan also endorsed by Sen. Edward Kennedy (D.-Mass.). The collapse of the NHI drive in Congress and the steadily dwindling support for the type of national health plan supported by labor has helped to put the committee's activities in the background in recent years.

\* \* \* \*

## COUNCIL MINUTES

September 7, 1980

The Council of the Arkansas Medical Society met at 12:00 noon on Sunday, September 7, 1980, in the Camelot Inn, Little Rock. Present were: Burge, Kutait, Smith, Shuffield, Martin, Duzan, Crow, Gray, J. Bell, P. Bell, Hestir, Irwin, Warren, Sanders, Harris, McCrary, Mann, Jones, Jouett, Henry, Wilkins, Lilly, Phillips, Andrews, Wynne, Townsend, Saltzman, Verser, Kolb, Applegate, Paul Cornell, Richard Pearson, James Weber, Milton Deneke, Bob Benafield, Thomas Bruce, Mrs. Boop, Mr. Owens, Mr. Cearley, Mr. Mitchell, Mr. Schaefer, Carol Hogue, Ph.D., Marge Brewster, Ph.D., Don Hill, C. C. Long, Miss Richmond, and Mr. LaMastus.

The Council transacted business as follows:

1. Minutes of the Executive Committee meetings held on July 11th and July 30th were presented for approval by the Council.  
Jouett moved that the section of the minutes pertaining to the winter meeting be extracted for a separate vote and that the winter meeting be held at Little Rock. The motion lost.  
The Council then approved the minutes of the Executive Committee for July 11th and July 30th as presented.
2. Chairman Burge then reported on actions of the Executive Committee taken August 27th, as follows:
  - (1) Approved Medical Society support of Amendment 59 to the State Constitution;
  - (2) Approved the request of the Arkansas Department of Human Services for endorsement of its grant proposal for funding of a workshop and resource development for training of primary care providers in alcohol, drug and mental health programs;
  - (3) Recommended that the Medical Society group plan with Blue Cross-Blue Shield not be expanded to include employees of physicians and their families because of problems encountered in implementation.
 Upon motion of Wilkins, the actions were approved by the Council.
3. Upon motion of Wilkins, the Council voted to schedule the 1984 Annual Session for April 11-15 at the Camelot Inn and Convention Center in Little Rock.
4. Upon motion of Wilkins, the Council endorsed the proposed revision of the State Med-

ical Board's "Regulation 10" pertaining to nurse practitioners.

5. Dr. Verser, delegate to the American Medical Association, reported on the recent meeting of the AMA House of Delegates.
6. Carol Hogue of the University of Arkansas Medical Sciences Campus discussed the proposed Arkansas Reproductive Health Monitoring Program. Upon motion of McCrary, the Council voted to go on record as supporting the proposal.
7. The Council heard Mr. Paul Schaefer discuss the Arkansas Medical Society Employees Pension Plan.

Paul Cornell presented a report of the Ad Hoc Committee on Study of the Pension Plan, which contained the following recommendations:

1. That the pension plan for Society employees be changed from a defined benefit plan to a defined contribution plan.
2. That vesting remain the same as in the present plan.
3. That the plan not include a provision for CPI adjustment.
4. That the Society's contribution to the plan be computed on the basis of gross salary, excluding fringe benefits. Salary was defined as included bonuses.
5. That the Society contribution be 8% of salary with a minimum 3% mandatory contribution by the employee.
6. The Council and the Pension Board of Trustees give special consideration to the situation of Miss Thompson inasmuch as the figures presented by the consultant showing the effect on retirement benefit of employees indicated that this employee would be penalized by the change to a defined contribution plan.

Stanley Applegate presented the following recommendations of the Board of Trustees of the Pension Plan:

1. If the Council feels changes must be made in the employee retirement program, the present plan should be retained for the three fully-vested employees (Leah Richmond, Dorothy Thompson, and Peggie Branham).
2. The Council should be reminded that a 10% limit has been placed on the CPI adjustment under the pension plan, with integration of social security increases to further reduce the

pension benefit. The trustees felt that there should be no further reduction in this provision of the retirement program at this time.

3. If the Council feels that any significant changes must be made in the employee retirement program, no such change be considered until competitive proposals from new sources are presented. The Board further recommended that an audit of the present plan, including present values of benefits, be made by an independent actuary.

McCrary moved that the Council accept the recommendations of the Ad Hoc Committee with two exceptions: (1) there be an annual review by the Board of Trustees to monitor the effect of inflation on the retirement benefit of employees and that the Board report to the Council on the monitoring of the inflation factor, and (2) that appropriate action be taken so that Miss Thompson and Dr. Long would not be penalized in retirement benefit because of the change to the defined contribution plan. Second by Jones.

Chairman Burge expressed appreciation to the Ad Hoc Committee for their work. He then asked for a show of hands on voting members of the Council present and asked that Council members not abstain from voting on the issue. Wilkins made a substitute motion that there be no mandatory 3% contribution by the employees. Mann pointed out that this would reduce the retirement benefit of the employees. Figures were presented which indicated that four employees would have their retirement benefit reduced if such a plan were adopted.

Lilly made a substitute motion to postpone action on the pension plan until the next meeting so that the Council could review all of the information made available to the Ad Hoc Committee. Second was by Kutait. The motion did not carry.

Andrews then made a substitute motion that the Council accept the report of the Ad Hoc Committee with the following exceptions:

- (1) employees not be required to contribute 3% of their salary to the plan;
- (2) the Society contribution to the plan be 11% of salary for each employee.

The motion carried, with two opposition votes. The motion by Wilkins was then withdrawn.

8. Payton Kolb reported for his Ad Hoc Committee on an Officers' Retreat.



Upon motion of McCrary, the Council voted to poll officers of the Society to determine probable participation in a retreat. If as many as 35 people indicate participation, the retreat will be held. Participants will pay for their own expenses, with retreat to be held October 18-19 at Indian Rock Resort. The motion carried.

9. Upon motion of Jones, the Council voted to postpone until the next meeting the report of the Reorganizational Study Committee.

The Council adjourned at 4:12 p.m.

John P. Burge, M.D.

Chairman

\* \* \* \* \*



**keeping up**

**Category 1  
Continuing Medical Education  
Programs Available in  
Arkansas**

#### RECURRING EDUCATION PROGRAMS

Unless otherwise indicated, programs are for one to one and one-half hours Category I credit.

##### **FAYETTEVILLE — AHEC-NW**

*Medical Teaching Conference*, each Saturday, 7:30 a.m., Washington Regional Medical Center.

##### **FAYETTEVILLE — VA MEDICAL CENTER**

*Radiology Conference*, January 15 and February 5 and 19, 1:00 p.m., Conference Room.

*Pathology Conference*, January 20 and February 17, 3:00 p.m., Conference Room.

*Mortality Conference*, January 8 and February 12, 3:00 p.m., Conference Room.

##### **FORT SMITH — AHEC**

*Tumor Conference*, every Tuesday, 12:00 noon. Fourth Floor Conference Room, Sparks Regional Medical Center.

##### **HOT SPRINGS — ST. JOSEPH'S MERCY MEDICAL CENTER**

*Arthritis*, January 6, 12:00 noon, Ouachita Memorial Hospital.

##### **JONESBORO — ST. BERNARD'S REGIONAL MEDICAL CENTER**

*Interesting Cases*, second and fourth Tuesday, 12:00 noon, Dietary Conference Room. Sponsored by AHEC-NE.

*Tumor Conference*, third Tuesday, 12:00 noon, Dietary Conference Room. Sponsored by AHEC-NE.

*Medical Lecture Series*, each Friday except third Friday, 11:50 a.m., Dietary Conference Room. Sponsored by AHEC-NE.

*Chest Conference*, third Friday, 11:50 a.m., Dietary Conference Room. Sponsored by AHEC-NE.

##### **LITTLE ROCK — BAPTIST MEDICAL CENTER**

*Pulmonary Care Conference*, each Tuesday, 12:00 noon to 1:00 p.m., Dining Room #4.

*Central Arkansas Primary Care Conference*, second Tuesday, 7:00 p.m. to 9:00 p.m., Auditorium.

*Cardiopulmonary Resuscitation Course*, second Wednesday, 6:00 p.m. to midnight, Human Resource Development Area.

Six hours Category I credit.

*Emergency Medicine Conference*, every other Wednesday, 12:30 p.m. to 1:30 p.m., Conference Room #1.

*Morbidity and Mortality Conference*, first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.

NOTE: January 1st conference cancelled.

*Surgery Conference*, each Thursday except first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.

*Anesthesiology Conference*, third Thursday, 7:00 a.m. to 8:00 a.m., Dining Room #3.

As organizations accredited for continuing medical education by the Liaison Committee on Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.

### LITTLE ROCK — ST. VINCENT INFIRMARY

*Interhospital GI Problems Conference*, first Monday, 6:00 p.m. to 7:00 p.m., Room E155, Education Wing.  
*Pediatric Conference*, first and third Monday, 12:30 p.m. to 1:30 p.m., Room E159, Education Wing.  
*Interhospital Urology Grand Rounds*, first Tuesday, 5:30 p.m. to 6:30 p.m., Room E159, Education Wing.  
*Peripheral Vascular Disease Conference*, third Tuesday, 6:00 p.m. to 7:00 p.m., Room E159, Education Wing.  
*Neuropathology Conference*, third Tuesday, 5:00 p.m. to 6:00 p.m., Room S1169, Laboratory.  
*Pulmonary Conference*, January 8 and 22, 12:00 noon to 1:00 p.m., Room E159, Education Wing.  
*Cardiology Conference*, January 15 and 29, 12:00 noon to 1:00 p.m., Room E159, Education Wing.

### LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

*Internal Medicine Grand Rounds*, each Tuesday, 8:00 a.m. to 9:00 a.m., Education I Auditorium.  
*Neuroradiology Conference*, each Wednesday, 4:00 p.m. to 5:00 p.m., Department of Radiology Conference Room.  
*Radiology Continuing Education Lecture Series*, two Wednesdays each month, 6:00 p.m. to 7:30 p.m., Department of Radiology Conference Room.  
*Categorical Course in Radiology*, each weekday except Wednesday, 4:15 p.m. to 5:00 p.m., Wednesday, 5:00 p.m. to 5:45 p.m., Department of Radiology.  
*Psychiatry Grand Rounds*, each non-holiday Thursday, 12:30 p.m. to 1:30 p.m., Child Study Center Auditorium.

### PINE BLUFF — AHEC-SW

*Obstetrics and Gynecology Conference*, second Monday, 12:30 p.m., Classroom B, Jefferson Hospital.  
*Family Practice Conference*, first, third, and fourth Monday, 12:30 p.m., Classroom B, Jefferson Hospital.  
*Psychiatry Conference*, each Tuesday, 12:30 p.m., A-V Classroom, Melville Library, AHEC-Pine Bluff Building.  
*Southeast Arkansas Medical Lecture Series*, fourth Wednesday, 6:30 p.m. to 9:00 p.m., dinner meeting at local restaurant.  
*Surgical-Medical Subspecialty Conference*, first Wednesday of alternate months, 12:30 p.m., Classroom B, Jefferson Hospital.  
*Surgery Conference*, first Wednesday of alternate months, 12:30 p.m., Classroom B, Jefferson Hospital.  
*Internal Medicine Conference*, second and fourth Wednesday, 12:30 p.m., Classroom B, Jefferson Hospital.  
*Pediatric Conference*, third Wednesday, 12:30 p.m., Classroom B, Jefferson Hospital.  
*Radiology Conference*, second Wednesday, 12:30 p.m., Classroom B, Jefferson Hospital.  
*Chest Conference*, each Friday, 12:30 p.m., Classroom B, Jefferson Hospital.



## PERSONAL AND NEWS ITEMS

### Chief Of Staff

Dr. Joe P. Rouse has been chosen as the new Chief of Staff at Fayetteville City Hospital. The outgoing Chief of Staff is Dr. James K. Patrick. Other officers are: Dr. Johnny Adkins as Vice-Chief of Staff and Dr. Linda Markland as Secretary-Treasurer.

### Cherokee Village Radiologist

Dr. Lewis Allen, formerly of Shawnee Mission, Kansas, has joined the staff of the Eastern Ozarks Community Hospital in Cherokee Village.

### Medical Library

The medical library at the Osceola Memorial Hospital has been named the "Dr. L. D. Massey Library." Dr. Massey was honored for his many

years of medical practice and his work in stimulating interest in the medical profession among Osceola High School students. Dr. Massey received a plaque from the medical staff as a tribute to his years of service and dedication.

### New Office

Dr. Richard L. Burnett of Mountain Home has recently moved into his new medical office at 444 Hospital Drive. He was formerly with the Saltzman-Guenther Clinic.

### Delta Hills HSA

Dr. William R. Green of Jonesboro has been appointed to the Board of Directors of the Delta Hills Health Systems Agency. Dr. Don Vollman of Jonesboro rotated off the Board.



### **Newport Surgeon**

Dr. Hon K. Poon, a General Surgeon, has opened an office in Newport. He will do general practice as well as surgery.

### **Meeting In England**

Dr. Edward Hammons of Forrest City represented the Arkansas Chapter of the American College of Emergency Physicians at the recent meeting of the International Congress on Pre-Hospital Care in Brighton, England. Dr. Hammons is president of the state chapter of the College of Emergency Physicians.

### **Change Of Office**

Dr. H. Wade Westbrook, West Memphis, has moved his office to Suite 204 of the Professional Building at 228 Tyler.

### **Dr. Kirby Speaks**

Dr. Henry V. Kirby of Harrison recently addressed the Boone County Hospital and Genea-

logical Society on the topic of "Evolution of Local Medicine."

### **Air Force Award**

Dr. John Giller, Jr., of El Dorado, has been selected as Outstanding Aerospace Physician of the Year in the Air Force Reserve. Dr. Giller, a Colonel, is Commander of the 917th TAC Clinic (Reserve) at Barksdale Air Force Base in Louisiana.

### **Mena Physician**

Dr. Larry Price, formerly of Mt. Ida, has opened an office in Mena. Dr. Price is a General Practitioner.

### **Little Rock Physician Honored**

During the annual banquet of the Arkansas Region of the American College of Physicians, Dr. S. William Ross of Little Rock was presented the Robert Shields Abernathy Award. The award is given for outstanding educational and clinical achievements and high ethical standards.



## **NEW MEMBERS**

### **Dr. Robert G. Lassonde**

Dr. Robert Lassonde is a new member of the Craighead-Poinsett County Medical Society. He was born in Montreal.

Dr. Lassonde's pre-med education was at St. Laurent College. In 1966 he was graduated by the University of Montreal Faculty of Medicine. His internship was served at St. Luc Hospital in Montreal and his residency at St. Luc Hospital and Notre Dame Hospital, Montreal.

Dr. Lassonde held a teaching position in Post Graduate Education with Quebec Urological Association. From 1971 to 1980, he practiced at Mercier Hospital, St. Hyacinthe, Quebec, Canada. Dr. Lassonde held the positions of Chief of Urol-

ogy and Chief of Staff during his association with the Honore Mercier Hospital.

A Urologist, Dr. Lassonde has his office at 3100 Apache Drive in Jonesboro.

The Crawford County Medical Society has added two new members to its roll:

### **Dr. Thomas J. McHattie**

A native of Canada, Dr. Thomas McHattie was graduated by the University of Saskatchewan in 1965 with a B.A. In 1969 he received his medical degree from the University of Saskatchewan College of Medicine.

Dr. McHattie served his internship at University Hospital, Saskatoon, Saskatchewan. His residency was served at Hurley Hospital, Flint, Michigan, and the University Hospital, Saskatoon. From 1973 to 1980, he practiced in Regina, Saskatchewan.

Dr. McHattie has his office for the practice of Obstetrics-Gynecology at Chestnut and 20th in Van Buren.

### **Dr. Aubrey L. Travis**

Dr. Aubrey Travis was born in Winnipeg, Manitoba, Canada.

Dr. Travis' pre-med education was at University of Manitoba, Winnipeg, Canada, and Prince of Wales College, Charlottetown, Prince Edward

## NEW MEMBERS

Island. In 1958 he was granted his medical degree by the Dalhousie University Faculty of Medicine, Halifax, Nova Scotia. His internship was at Victoria General Hospital, Halifax, Nova Scotia.

From 1958 to 1980, Dr. Travis practiced with the Dryden Medical Clinic, Dryden, Ontario.

Dr. Travis is a Family Practitioner. His office is located at East Main and 20th, Van Buren.

### **Dr. Richard J. Babaian**

Dr. Richard J. Babaian, a new member of the Pulaski County Medical Society, was born in Bronx, New York.

Dr. Babaian's pre-med education was at Fordham University in Bronx. In 1972 he was graduated by the Georgetown University School of Medicine in Washington, D.C. His internship and Surgery residency were at the University of Wisconsin Medical College. From 1974 to 1977, Dr. Babaian held a Urology residency at the University of North Carolina School of Medicine. Another residency in Urological Oncology was served at M. D. Anderson Hospital in Houston. He is certified by the American Board of Oncology.

Dr. Babaian practices Urologic Oncology at 4301 West Markham. He is associated with the Department of Urology at the University of Arkansas College of Medicine.

The Washington County Medical Society has accepted two new members:

### **Dr. Robert W. Dow**

A native of Odessa, Texas, Dr. Robert W. Dow received his pre-med education at the University of Oklahoma. In 1976, he was graduated by the University of Oklahoma School of Medicine.

Dr. Dow served his internship at St. Paul Ramsey Hospital in St. Paul, Minnesota. From 1977 to 1980, he was in residency at the University of Minnesota Medical School, Department of Neurology.

A board certified Neurologist, Dr. Dow has his office at 3000 Market Street in Fayetteville.

### **Dr. James L. Lesniak**

Dr. James Lesniak was born in Pittsburgh, Pennsylvania.

Dr. Lesniak was granted a B.A. in 1965 by La Salle College, Philadelphia, Pennsylvania. In 1969, he was graduated by the Medical College of Wisconsin. His internship and a General Surgery residency were at Mercy Hospital in Pittsburgh. From 1971 to 1973, he served with the United States Navy. After his tour with the Navy, Dr.

Lesniak completed an Anesthesiology residency at the Medical College of Wisconsin.

Before beginning practice in Fayetteville, Dr. Lesniak practiced for three years in Fort Lauderdale, Florida. He is certified by the American Board of Anesthesiology.

Dr. Lesniak's office is located at 1391 Edgehill Drive (Post Office Box 1062) in Fayetteville. He is in the practice of Anesthesiology.

\* \* \* \*

## **COURTESY MEMBERS**

### **Dr. Charles R. Gosnell**

The Pulaski County Medical Society has accepted Dr. Charles Gosnell as a courtesy member. He is serving a Nuclear Medicine Fellowship at the University of Arkansas College of Medicine.



## **THINGS TO COME**

**1981**

### **March 2-4**

*"The Diagnosis and Treatment of Reye's Syndrome."* National Institutes of Health Consensus Development Conference. Masur Auditorium, NIH Clinical Center (Building 10), Bethesda, Maryland. For further information, contact: Dr. Joseph S. Drage, Chief, Development Neurology Branch, NDP, NINCDS, Room 816, Federal Building, 7550 Wisconsin Avenue, Bethesda, Maryland 20205, phone (301) 496-6701.

### **March 22-25**

*Southwest Allergy Forum Annual Meeting.* Arlington Hotel, Hot Springs. Hour-for-Hour Category I credit will be granted. For further information, contact Dr. Purcell Smith, Jr., General Chairman, Post Office Box 5675, Little Rock, Arkansas 72215.

### **April 6-10**

*Clinical Anesthesiology for General Practitioners.* University of Oklahoma College of Medicine. Forty credit hours in Category I of the Physician's Recognition Award of the A.M.A. Registration \$225. Deadline for registration, March 23. For more information, contact Barbara Tichenor, Office of Continuing Medical Education (405) 271-2350.





Dear Doctors and Doctors' Wives  
throughout Arkansas:

I would like to make a serious request to you for donations to AMA-ERF. I think the following portion of a letter from Dr. Tom Bruce, Dean of the University of Arkansas College of Medicine, written to explain the meaning of the term "unrestricted funds" *also* describes the great need at this particular time for extra giving for our medical students:

"...every single cent of the AMA-ERF money has been used now and in the past to support needy students in getting through medical school. The term 'unrestricted' is a technical device to keep AMA-ERF money out of the general University coffers, in which instance it would go to pay faculty/staff salaries and other general educational support costs. We cannot support directly students with our state-appropriated (restricted) account funds, and so it is important to differentiate 'unrestricted' from 'undesignated'. The entire contribution, as I have indicated, is designated as financial aid to needy students, ordinarily those who are stretched beyond their loan capacity or those who have unexpected emergency needs not envisioned at the beginning of the year.

"This policy of using the AMA-ERF funds for student support is in keeping with our use of the funds in the past as a 1 to 10 match for Federal student assistance funds. When the Federal program was dropped by Congressional action, we switched the AMA-ERF matching funds to direct student support.

"Let me emphasize that the need for financial support for our students is greater today than at any time in our history. Our best estimate of the 1980-81 cost to a freshman medical student (unmarried) at the University of Arkansas is \$7,206 per year for tuition, insurance, books, equipment, room, board and miscellaneous expenses. We have 146 students enrolled this year whose parental combined incomes are less than \$15,000 per year (84 are less than \$10,000 per year). So you can see what a terrible problem

our students are facing, and adequate loans have simply not been available to all those in need. Without the help of the approximately \$10,000 donation which we receive each year from the AMA-ERF we simply would be in dire straits and some students likely would have to be dropped because of financial constraints."

The Auxiliary can send a card stating that a donation has been made "in appreciation of service" to physicians who have treated your family. Contact Mrs. J. Larry Lawson, ARA-ERF State Chairman, Route 3, Box 14, Paragould, Arkansas 72450.

Sincerely,

Mrs. Warren Boop,  
President  
Arkansas Medical Society  
Auxiliary

Mrs. J. Larry Lawson  
AMA-ERF State  
Chairman



## O B I T U A R Y

### DR. OLEN BRIDGES

Dr. Olen Bridges died October 28, 1980. He was born August 9, 1925.

A graduate of Henderson State University and the University of Arkansas College of Medicine, Dr. Bridges completed his residency training at St. Vincent Infirmary. He had practiced medicine in Searcy since 1957. Dr. Bridges was a World War II veteran.

Dr. Bridges is survived by Dr. Mike Bridges of Bald Knob, his son, another son and six daughters.

### DR. LON REED

Dr. Lon Reed of Hot Springs died October 25, 1980. Dr. Reed was born September 20, 1904. He was a 1935 graduate of the University of Tennessee College of Medicine at Memphis.

Dr. Reed, a retired general practitioner, was a member of the First Baptist Church, Hot Springs Lodge No. 62 F&AM, Royal Order of Jesters, Elks Lodge, Garland County Medical Society, Southern Medical Association and American Medical Association. He was a Fifty-Year 32nd Degree Mason and a Shriner.

Dr. Reed is survived by his wife, Mrs. Elizabeth Parr Reed, and one son.

**DR. ROY SCHIRMER**

Dr. Roy Schirmer, born November 2, 1906, died October 12, 1980.

Dr. Schirmer was graduated from the University of Tennessee Medical School in 1933. During

World War II, he served with the United States Army Medical Corps. Dr. Schirmer had practiced in Fort Smith for 31 years, specializing in Allergy.

Dr. Schirmer's wife, Coye, and one son survive him.



**RESOLUTIONS**



**DR. BILL DAVE STEWART**

WHEREAS, the members of the Pulaski County Medical Society note with sincere sorrow the recent death of our esteemed colleague, Bill Dave Stewart, M.D., and

WHEREAS, Dr. Stewart had been a highly respected member of the Society for 35 years and had established an enviable reputation in the medical community; and

WHEREAS, he was highly respected in his chosen field of surgery both by his fellow physicians and by his patients.

BE IT THEREFORE RESOLVED:

THAT, this resolution be made a part of the permanent archives of the Society; and

THAT, a copy of this resolution be forwarded to Dr. Stewart's family as an expression of our deepest sympathy; and

THAT, a copy be forwarded to the Journal of the Arkansas Medical Society for publication.

By the Direction of the Memorials Committee  
T. Duel Brown, M.D., Chairman  
Robert Watson, M.D.  
Henry Hollenberg, M.D.  
Pulaski County Medical Society

**DR. ROY E. SCHIRMER**

WHEREAS, God in His infinite mercy has seen fit to call from our midst Dr. Roy E. Schirmer, and

WHEREAS, Dr. Schirmer has faithfully served his patients in the community at large throughout his entire medical career, and

WHEREAS, Dr. Schirmer, during his years of practice, has reflected the highest ideals of his profession, and

WHEREAS, in his devotion to family, church and friends, he exemplified the best in man, and

WHEREAS, the Sebastian County Medical Society mourns his loss

THEREFORE, BE IT RESOLVED, by the Sebastian County Medical Society, in its regular meeting on October 14, 1980, hereby adopts these Resolutions and directs that a copy be spread on the Minutes of the Society and that a copy be furnished the family and that a copy be published in the Journal of the Arkansas Medical Society.

ADOPTED BY:

Sebastian County Medical Society  
Charles Bailey, M.D.  
President





# Just what do you get for your AMA dues?

You get a package of personal and professional benefits and services that are the most extensive of any professional organization.

You get group insurance programs that provide coverage at far lower costs than individual coverage. They include: Group Life Insurance, Excess Major Medical, Disability Income Insurance, Supplemental "In Hospital" Insurance, Accidental Death and Dismemberment Plan, and Office Overhead Insurance.

You get publications to keep you abreast of medical and health developments: *JAMA*,

*American Medical News*, and one of nine specialty journals.

There's the AMA Members Retirement Plan. Professional practice management information and guides. Authoritative legal information. Continuing medical education. The nation's largest physician placement service. The research resources of one of the nation's greatest medical libraries.

These are just a few of the broad range of benefits you get for your dues. Even more important, you get a strong and effective spokesman to represent you, your interests, and your views.



**Join us.  
We can do much more together.**

Dept. of Membership Development  
American Medical Association  
535 N. Dearborn St./Chicago, IL 60610

Please send me more information on the AMA and AMA membership.

Name \_\_\_\_\_

Address \_\_\_\_\_

City/State/Zip \_\_\_\_\_

# **ARKANSAS MEDICAL SOCIETY**

## **MEMBERSHIP ROSTER**

### **December 1, 1980**



**HEADQUARTERS OFFICE:**  
**214 NORTH 12TH STREET**  
**POST OFFICE BOX 1208**  
**FORT SMITH, ARKANSAS 72902**  
**TELEPHONE: 501 782-8218**



# MEMBERSHIP ROSTER OF THE ARKANSAS MEDICAL SOCIETY 1980-1981

Type of Practice	Member's Name	Address	Telephone Number
<b>ARKANSAS COUNTY</b>			
FP	Burleson, Stan W.	Post Office Drawer 512, DeWitt 72042.	946-1326
GP	Cross, Joseph E.	Post Office Box 472, DeWitt 72042.	946-1676
FP	Daniel, Noble B.	Route 1, Box 21-D, Stuttgart 72160.	673-7211
FP	Guyer, G. L.	Route 1, Box 21-D, Stuttgart 72160.	673-7211
FP	Hestir, John M.	Post Office Drawer 512, DeWitt 72042.	946-3637
FP	John, Milton C., Jr.	Route 1, Box 21-D, Stuttgart 72160.	673-7211
GS	Millar, Paul H.	Route 1, Box 21-D, Stuttgart 72160.	673-7211
FP	Morgan, Jerry D.	Route 1, Box 21-D, Stuttgart 72160.	673-7211
GP	McCracken, Elbert A.	509 South Main, Stuttgart 72160.	673-8571
	Nguyen, Van M.	Jacksonville, Florida	
FP	Northcutt, Carl E.	Route 1, Box 21-D, Stuttgart 72160.	673-7211
FP	Pritchard, Jack L.	1022 South Main, Stuttgart 72160.	673-2331
GP	Rasco, Charles W., Jr.	111 South Jackson, DeWitt 72042.	946-3156
FP	Speer, Hoy B., Jr.	1814 North Henderson, Stuttgart 72160.	673-2586
R	Speer, Marolyn N.	Route 1, Box 21-C, Stuttgart 72160.	673-3511
GP	Van Duyn, Thomas S.	Post Office Box 110, Stuttgart 72160.	673-7291
<b>ASHLEY COUNTY</b>			
FP	Bui, Thieu	Post Office Box 248, Wilmot 71676.	473-2274
FP	Cothorn, William R.	Post Office Box 577, Crossett 71635.	364-6111
	Edwards, Lawrence E.	Shalimar, Florida	
GP	Garcia, Luis F.	Post Office Box 792, Crossett 71635.	364-4181
#	Mask, Don L.	Hamburg	
FP	Ripley, C. E.	317 North Alabama, Crossett 71635.	364-5113
GP	Salb, R. L.	113 Pine, Crossett 71635.	364-2138
FP	Thompson, Barry V.	310 North Alabama, Crossett 71635.	364-5746
FP	Toon, D. L.	315 North Alabama, Crossett 71635.	364-8062
<b>BAXTER COUNTY</b>			
GP	Arnold, Carl B.	Post Office Box 457, Salem 72576.	895-3281
GYN	Baker, Robert L.	#10 Medical Plaza, Mountain Home 72653.	425-2552
GP	Beard, Arthur L.	126 West Sixth, Mountain Home 72653.	425-3131
PS	Beckman, James S.	Post Office Box 276, Mountain Home 72653.	425-5232
GP	Benton, Thomas H.	Post Office Box 547, Salem 72576.	895-3215
EM	Brian, Francis M., Jr.	Baxter General Hospital, Mountain Home 72653.	425-4213
GP	Burnett, Richard L.	Post Office Box 301, Mountain Home 72653.	425-3030
IM	Cheney, Maxwell G.	Post Office Box 725, Mountain Home 72653.	425-3125
NEP	Chock, Daniel P.	Post Office Box 786, Mountain Home 72653.	425-5535
PD	Chock, Helga E.	Post Office Box 786, Mountain Home 72653.	425-5535
AN	Clarke, James S.	7th and Shiras, Mountain Home 72653.	425-9484
R	DeLany, Clarence L.	Post Office Box 939, Salem 72576.	895-3124
PTH	Douglas, Donald S.	#14 Medical Plaza, Mountain Home 72653.	425-8411
GP	Ducker, David E.	Post Office Box 367, Salem 72576.	895-3215
GP	Dunbar, James C.	Post Office Box 410, Mountain Home 72653.	425-2020
FP	Eans, Thomas L.	126 West Sixth, Mountain Home 72653.	425-3131
R	Fontenot, Edwin, Jr.	Route 2, Box 57-A, Mountain Home 72653 (Res.).	425-7337
GS	Ford, William H.	Post Office Box 433, Mountain Home 72653.	425-9120
GP	Gotaas, Bernice.	Post Office Box 44, Bull Shoals 72619.	445-4755
GS	Grasse, A. Meryl.	Post Office Box 438, Calico Rock 72519.	297-3726
GP	Guenther, John F.	126 West Sixth, Mountain Home 72653.	425-3131
D	Hardin, Philip R.	Post Office Box 142, Mountain Home 72653.	425-9737
GS	Hawkins, Michael L.	#3 Medical Plaza, Mountain Home 72653.	425-6988
GP	Kelley, Lawrence A.	Post Office Box 299, Bull Shoals 72619.	445-4292
FP	Kerr, Robert L.	Post Office Box 706, Mountain Home 72653.	425-6971
OPH	Massey, J. Y.	Post Office Drawer H, Mountain Home 72653.	425-6026
OPH	McGaughey, Allen S.	Post Office Drawer H, Mountain Home 72653.	425-6026
FP	Moody, Michael N.	Highway 9 North, Salem 72576.	895-2541
PTH	Peterson, Hubert C.	#14 Medical Plaza, Mountain Home 72653.	425-8411
OPH	Sneed, John W.	Post Office Drawer H, Mountain Home 72653.	425-6026
GS	Stahl, Ray E., Jr.	Post Office Box 433, Mountain Home 72653.	425-9120
ORS	Sward, David T.	920 South Baker, Mountain Home 72653.	425-9293
R	Tullis, Joe M.	Post Office Box 373, Mountain Home 72653.	425-2398
U	Webb, E. Russell.	#10 Medical Plaza, Mountain Home 72653.	425-9373
GP	Wilbur, Paul E.	Post Office Box 706, Mountain Home 72653.	425-6971
FP	Wilson, Jack C.	Post Office Box 725, Mountain Home 72653.	425-3125
R	Wilson, M. Carolyn.	Post Office Box 373, Mountain Home 72653.	425-2797
<b>BENTON COUNTY</b>			
O&G	Addington, Alfred R.	1116 Poplar Place, Rogers 72756.	636-0300
PD	Allen, L. Barry	1114 Poplar Place, Rogers 72756.	636-9234
FP	Arkins, James H.	Post Office Box 420, Bentonville 72712.	273-9056
P	Ball, Eugene H.	Route 2, Box 53, Rogers 72756.	636-8307
FP	Baltes, Bernard J.	Post Office Box 369, Gravette 72736.	787-5221
GS	Bledsoe, James H.	1223 West Walnut, Rogers 72756.	636-5411
OPH	Boozman, Fay W., III.	Post Office Box 1353, Rogers 72756.	636-7506
D	Carter, Vernon H.	101 South 12th, Rogers 72756.	636-0599
GP	Clower, John D.	Post Office Box 737, Rogers 72756.	636-2711
FP	Cohagan, Donald L.	408 Northwest "I", Bentonville 72712.	273-5543
RD	Compton, Neil E.	Post Office Box 209, Bentonville 72712 (Res.).	273-5123
R	Cooper, Edward M.	#7 Professional Drive, Bella Vista 72712.	855-3736
GS	Costaldi, Mario E.	1223 West Walnut, Rogers 72756.	636-5411
RD	Davies, Dale H.	13 Britten Circle, Bella Vista 72712 (Res.).	855-9477
PTH	Denman, David A.	Rogers Memorial Hospital, Rogers 72756.	636-0200
IM	Donnell, Robert W.	Post Office Box 737, Rogers 72756.	636-2711
O&G	Elkins, James P.	1116 Poplar Place, Rogers 72756.	636-0300
FP	Floyd, Louis C.	Route 8, Box 100, Bella Vista 72712.	855-3711
FP	Garrett, David C., III.	Post Office Box 737, Rogers 72756.	636-2711
FP	Garrett, John L.	Post Office Box 369, Gravette 72736.	787-5221
P	Hall, Billy V.	Post Office Box 369, Gravette 72736.	787-5221
PD	Harmon, Harry M.	1114 Poplar Place, Rogers 72756.	636-9234
FP	Hitt, Jerry L.	Post Office Box 737, Rogers 72756.	636-2711
OPH	Hof, C. William.	Post Office Box 1197, Rogers 72756.	636-0238
FP	Holder, Robert E.	Post Office Box 420, Bentonville 72712.	273-9056
AN	Horner, Glennon A.	601 West Walnut, Rogers 72756.	636-3840
FP	Howard, Willard H., Jr.	Post Office Box 30, Bentonville 72712.	273-5551
FP	Hull, Robert R.	1301 West Persimmon, Rogers 72756.	636-7004
	Humiston, Karl E.	New York, New York	
FP	Huskings, John A.	Post Office Box 737, Rogers 72756.	636-2711
RD	Jennings, William E.	817 Summit Drive, Rogers 72756 (Res.).	636-3122
ORS	Kendrick, Carl M.	1227 West Walnut, Rogers 72756.	636-9607
R	Knapp, James R.	Rogers Memorial Hospital, Rogers 72756.	636-0200, Ext. 764
IM	Miles, Richard W.	Post Office Box 1000, Rogers 72756.	636-6551

Type of Practice	Member's Name	Address	Telephone Number
FP	Mullins, Neil D.	Post Office Box 296, Bentonville 72712	273-9081
FP	McCollum, Edward N.	Post Office Box 127, Decatur 72722	752-3233
GE	McKnight, William D.	Post Office Box 1567, Rogers 72756	636-3627
FP	Neaville, Gary A.	Post Office Box 737, Rogers 72756	636-2711
GS	Pearson, Richard N.	1223 West Walnut, Rogers 72756	636-5411
RD	Pickens, James L.	2212 West Walnut, Rogers 72756 (Res.)	636-2862
R	Platt, Michael R.	Post Office Drawer "I", Gravette 72736	787-5291, Ext. 196
OTO	Reese, Michael C.	1110 West Elm, Rogers 72756	636-0110
PH	Robbins, Robert H.	Benton County Health Department, Bentonville 72712	273-9511
FP	Rollow, John A.	408 Northwest "I", Bentonville 72712	273-2497
IM	Rolniak, Wallace A.	Post Office Box 1000, Rogers 72756	636-6551
GP	Ronald, Douglas C.	Route 8, Box 100, Bella Vista 72712	855-3711
FP	Russell, Homer B.	Post Office Box 27, Pea Ridge 72751	451-1174
GP	Stone, W. Tex.	1219 West Walnut, Rogers 72756	636-6881
R	Swaim, T. J.	Rogers Memorial Hospital, Rogers 72756	636-0200
U	Turley, Jan Thomas	1217 West Walnut, Rogers 72756	636-9669
IM	Waldon, G. Bruce	Post Office Box 1000, Rogers 72756	636-6551
GP	Warren, Grier D.	Post Office Box 737, Rogers 72756	636-2711
FP	Webb, William F.	Post Office Box 368, Decatur 72722	752-3233
IM	Wright, Larry D.	1040 West Walnut, Rogers 72756	636-2711

#### BOONE COUNTY

GS	Bell, Thomas E.	Post Office Box 1116, Harrison 72601	741-6418
R	Bennett, Joe D.	651 North Spring, Harrison 72601	365-9667
P	Butts, Donald R.	Post Office Box 1214, Harrison 72601	741-3915
OTO	Chambers, Carlton L.	Bower at Pine, Harrison 72601	741-7684
PD	Chambers, Sue R.	Bower at Pine, Harrison 72601	741-7684
FP	Daniel, Charles D.	Nome Street, Marshall 72650	448-3327
U	Ferguson, Noel F.	707 North Vine, Harrison 72601	741-9481
GP	Fowler, Ross E.	217 West Stephenson, Harrison 72601	741-8651
IM	Garland, William J., Jr.	Post Office Box 1077, Harrison 72601	741-3459
GS	Gladden, Jean C.	Post Office Box 1118, Harrison 72601	741-8275
GP	Green, Jess D., Jr.	Post Office Box 288, Eureka Springs 72632	253-8070
GS	Hoberock, Thomas R.	Post Office Box 1116, Harrison 72601	741-7411
TS	Hudson, William A.	Hudsonaker's, Jasper 72641 (Res.)	446-2948
RD	Jackson, Ulys.	424 South Willow, Harrison 72601 (Res.)	743-1134
GP	Kirby, Henry V.	651 North Spring, Harrison 72601	741-5022
IM	Klepper, Charles R.	Post Office Box 578, Harrison 72601	741-3592
OPH	Kuharich, Richard M.	651 North Spring, Harrison 72601	741-9492
FP	Langston, R. H.	520 North Spring, Harrison 72601	741-8286
ORS	Ledbetter, Charles A.	224 West Erie, Harrison 72601	741-8289
OBG	Mahoney, Paul L., Jr.	Post Office Box 1241, Harrison 72601	741-7334
FP	Maris, Mahlon O.	Post Office Box 759, Harrison 72601	741-8247
EM	Marsh, John H.	620 North Willow, Harrison 72601	741-6141
GP	McCoy, Orville B.	Post Office Box 578, Harrison 72601	741-3592
FP	Poynor, C. M.	124 East Church, Berryville 72616	423-2806
FP	Reese, Ronald R.	Post Office Box 759, Harrison 72601	365-8247
R	Robinson, G. Allen	Post Office Box 728, Harrison 72601	741-2763
FP	Scroggins, Sam J.	651 North Spring, Harrison 72601	741-6373
OBG	Simpson, Thomas J.	620 North Spring, Harrison 72601	741-2441
CD	Smith, Van	Post Office Box 1077, Harrison 72601	741-3459
ORS	Vowell, Don R.	224 West Erie, Harrison 72601	741-8289
FP	Wallace, Oliver	Post Office Drawer AA, Green Forest 72638	438-5218
ORS	Williams, Ralph E.	302 Rice, Berryville 72616	423-3338
GS	Williams, Rhys A.	Post Office Box 1118, Harrison 72601	741-8275
FP	Wilson, Joe B.	520 North Spring, Harrison 72601	741-8286

#### BRADLEY COUNTY

GP	Crow, Merl T.	205 East Church, Warren 71671	226-5811
FP	Marsh, James W.	302 North Main, Warren 71671	226-2112
FP	Whaley, William C., Jr.	205 East Church, Warren 71671	226-5811
FP	Wynne, George F.	113 West Cypress, Warren 71671	226-2844

#### CHICOT COUNTY

FP	Burge, John H.	418 South Lake Shore Drive, Lake Village 71653 (Res.)	265-2059
GS	Burge, John P.	Lake Village Clinic, Lake Village 71653	265-5343
IM	Ponrartana, Prasart	Ponrartana Clinic, Lake Village 71653	265-5374
PD	Ponrartana, Saowaree	Ponrartana Clinic, Lake Village 71653	265-5374
GP	Russell, J. R.	Lake Village Clinic, Lake Village 71653	265-5343
GP	Sinlar, P.	2420 North Highway 65, Eudora 71640	355-4496
GP	Smith, Major E.	Post Office Box 310, Dermott 71638	538-5717
IM	Talbot, Allen G.	Lake Village Clinic, Lake Village 71653	265-5343
GP	Thomas, H. W.	Post Office Box 250, Dermott 71638	538-5255
GP	Tvedten, Tom	Lake Village Clinic, Lake Village 71653	265-5343
GP	Weaver, William J.	Post Office Box Q, Eudora 71640	355-4376
GP	Wilson, Thomas C.	117 East Peddicord, Dermott 71638	538-5253

#### CLARK COUNTY

RD	Anderson, P. R.	Post Office Box 758, Arkadelphia 71923 (Res.)	246-4464
FP	Balay, John W.	416 Main, Arkadelphia 71923	246-2431
GS	Blackmon, James T.	1008 Pine, Arkadelphia 71923	246-6734
RD	Clark, Charles G.	1108 Huddleston, Arkadelphia 71923	246-4493
FP	Gary, Eli	Post Office Box 475, Arkadelphia 71923	246-2491
PH	Kennedy, Jack W.	Fifth and Clay, Arkadelphia 71923	246-4471
FP	Luck, H. D.	3004 West Pine, Arkadelphia 71923	246-2471
FP	Mann, R. Jerry	416 Main, Arkadelphia 71923	246-2431
FP	McGrew, Gary L.	107 North 3rd, Gurdon 71743	353-2504
P	Parsons, Earl	117 North 11th, Arkadelphia 71923	246-8364
GP	Peoples, George R.	305 East Main, Gurdon 71743	353-4422
FP	Ritchie, Lois A.	3004 West Pine, Arkadelphia 71923	246-2471
GP	Ritter, N. R.	3004 West Pine, Arkadelphia 71923	246-2471
RD	Toombs, Vernon L.	101 Charlotte, Gurdon 71743 (Res.)	353-2935

#### CLEBURNE COUNTY

GP	Ashabranner, Wesley J.	401 Searcy, Heber Springs 72543	362-2414
OPH	Baldridge, Max	Post Office Box 431, Heber Springs 72543	362-3479
RD	Barnett, James C.	Front Street, Heber Springs 72543 (Res.)	362-2786
GP	Barnett, Michael E.	Fourth and Spring, Heber Springs 72543	362-3143
GP	Blackburn, Steve	421 South 7th, Heber Springs 72543	362-8203
FP	Cranford, Harrol L.	Post Office Box 271, Heber Springs 72543	362-8296
FP	Hinkle, Richard A.	Post Office Box 128, Quitman 72131	589-2600
GP	McClanahan, Donald H.	401 West Searcy, Heber Springs 72543	362-2414
GP	Poff, Joseph H.	401 West Searcy, Heber Springs 72543	362-2414
GP	Poff, Nathan L.	Post Office Box 1111, Heber Springs 72543	362-2414
RD	Rhyne, James T.	Post Office Box 168, Heber Springs 72543 (Res.)	362-5044



Type of Practice	Member's Name	Address	Telephone Number
R.....	Scruggs, Joe B.	Post Office Box 510, Heber Springs 72543	362-3121
IM.....	Sharp, Jack V.	Post Office Box 70, Heber Springs 72543	362-3316
FP.....	Wells, W. M.	300 East Roosevelt Road, Little Rock 72206	372-8361, Ext. 585
COLUMBIA COUNTY			
FP.....	Alexander, John E.	707 North Washington, Magnolia 71753	234-2288
FP.....	Farmer, John M.	104 East Columbia, Magnolia 71753	234-2230
IM.....	Flournoy, Durwood W.	105 West North, Magnolia 71753	234-1894
FP.....	Griffin, Rodney L.	123 North Jackson, Magnolia 71753	234-3040
R.....	Hunter, Robert W., Jr.	2602 Crestview, Magnolia 71753 (Res.)	234-6117
RD.....	Jones, Thomas H.	Post Office Box 387, Waldo 71770 (Res.)	693-5634
FP.....	Kelley, Charles W.	1327 North Washington, Magnolia 71753	234-5544
GS.....	McMahen, H. Scott	Post Office Box 647, Magnolia 71753	234-3340
FP.....	Pullig, Thomas A.	805 North Jackson, Magnolia 71753	234-8570
FP.....	Roberts, Franklin D.	110 West North, Magnolia 71753	234-8430
GP.....	Ruff, John L.	104 Hospital Road, Magnolia 71753	234-2144
GP.....	Rushton, Joe F.	219 North Washington, Magnolia 71753	234-1168
GP.....	Strange, Vance M.	Post Office Box 67, Stamps 71860	533-2438
OBG.....	Talley, Aubry	804 North Jackson, Magnolia 71753	234-8232
FP.....	Walker, Jack T.	123 North Jackson, Magnolia 71753	234-3040
FP.....	Weber, Charles H.	110 West North, Magnolia 71753	234-4411
RD.....	Wilson, John H.	904 Lawton Circle, Magnolia 71753 (Res.)	234-1545
CONWAY COUNTY			
FP.....	Buchanan, Thomas L.	200 South Moose, Morrilton 72110	354-4637
FP.....	Evans, Clifford L.	Post Office Box 706, Morrilton 72110	354-0135
GP.....	Hickey, Thomas H.	Post Office Box 230, Morrilton 72110	354-4623
GP.....	Hyatt, Benjamin C.	Post Office Box 265, Perryville 72126	889-5141
GP.....	Lipsmeyer, Keith M.	Post Office Box 677, Morrilton 72110	354-2456
GP.....	Owens, Gastor B.	601 South Moose, Morrilton 72110	254-4505
PTH.....	Rozzell, Allen R.	601 South Moose, Morrilton 72110	354-1225
FP.....	Wells, Charles F.	601 South Moose, Morrilton 72110	354-2123
#.....	White, H. B.	Morrilton	
CRAIGHEAD-POINSETT COUNTY			
D.....	Alston, Herman D.	816 Cobb, Jonesboro 72401	932-4570
R.....	Aston, J. Kenneth	3024 Young Road, Jonesboro 72401	972-7260
IM.....	Baldridge, John A.	505 East Matthews, Jonesboro 72401	932-1198
OBG.....	Basinger, James W.	Post Office Box 1478, Jonesboro 72401	935-3990
OBG.....	Berry, Donald M.	Post Office Box 1478, Jonesboro 72401	935-3990
OBG.....	Blair, Richard A.	505 East Matthews, Jonesboro 72401	935-3990
P.....	Blaylock, Jerry D.	901 South Church, Jonesboro 72401	935-0360
U.....	Bogaev, Leonard R.	812 Cobb, Jonesboro 72401	932-2926
R.....	Buckner, John H.	828 Cobb, Jonesboro 72401	932-7458
IM.....	Burns, Richard G.	505 East Matthews, Jonesboro 72401	932-1198
IM.....	Clopton, Owen H., Jr.	505 East Matthews, Jonesboro 72401	932-1198
HEM.....	Cohen, Robert S.	223 East Jackson, Jonesboro 72401	972-0063
GP.....	Cole, Gary B.	3100 Apache Drive, Jonesboro 72401	972-1733
GP.....	Craig, Gus A.	920 Union, Jonesboro 72401	932-3022
FP.....	Crawley, Michael E.	3100 Apache Drive, Jonesboro 72401	972-1720
ORS.....	Dickson, Glenn E.	505 East Matthews, Jonesboro 72401	932-1820
GS.....	Drake, James E.	Post Office Box 51, Jonesboro 72401	972-1960
OTO.....	Eddington, William R.	505 East Matthews, Jonesboro 72401	935-8132
ORS.....	Edwards, Harvey O.	924 South Main, Jonesboro 72401	972-0110
FP.....	Forestiere, A. J.	Post Office Box 106, Harrisburg 72432	578-5443
R.....	Garner, William L.	Post Office Box 1124, Jonesboro 72401	932-0639
OPH.....	George, Fred J.	505 East Matthews, Jonesboro 72401	935-6396
OTO.....	Gossett, Clarence E.	505 East Matthews, Jonesboro 72401	935-8132
R.....	Green, W. Robert	Post Office Box 1124, Jonesboro 72401	932-0639
IM.....	Guinn, Donald R.	505 East Matthews, Jonesboro 72401	932-1198
P.....	Guthrie, Alastair N.	2701 South Caraway Road, Jonesboro 72401	932-0692
IM.....	Hall, Ray H.	311 East Matthews, Jonesboro 72401	935-4150
GP.....	Harper, T. P.	Post Office Box C, Monette 72447	486-2131
GP.....	Hoque, Ernest L.	505 East Matthews, Jonesboro 72401	932-8121
R.....	Holland, James A.	Post Office Box 1124, Jonesboro 72401	932-7458
FP.....	James, Frank M.	3100 Apache Drive, Jonesboro 72401	972-5500
AN.....	Johnson, Larry H.	818 Cobb, Jonesboro 72401	932-4211
PD.....	Johnson, Roehl W.	505 East Matthews, Jonesboro 72401	935-6012
	Jones, R. J.	Whiteman AFB, Missouri	
GE.....	Jordan, Harry J.	311 East Matthews, Jonesboro 72401	935-4150
GS.....	Keisker, Henry W.	505 East Matthews, Jonesboro 72401	932-4581
PD.....	Kemp, Charles E.	505 East Matthews, Jonesboro 72401	935-6012
EM.....	Kirkley, John B.	Post Office Box 1458, Jonesboro 72401	972-6450
PTH.....	Kroe, Donald J.	411 East Matthews, Jonesboro 72401	932-7430
U.....	Lassonde, Robert G.	3100 Apache Drive, Jonesboro 72401	932-8674
FP.....	Lawrence, R. O.	417 East Matthews, Jonesboro 72401	972-0550
FP.....	Ledbetter, Joseph W.	804 South Church, Jonesboro 72401	935-5454
FP.....	LeJeune, John E.	924 South Main, Jonesboro 72401	972-8181
NEP.....	Mackey, Michael	311 East Matthews, Jonesboro 72401	935-4150
ORS.....	Mahon, Larry E.	810 Jeter Drive, Jonesboro 72401	935-9123
AN.....	Mitchell, George E.	818 Cobb, Jonesboro 72401	932-4211
FP.....	Modelevsky, Aaron C.	Post Office Box 1427, Jonesboro 72401	932-0980
OPH.....	McKee, B. E.	505 East Matthews, Jonesboro 72401	935-6396
EM.....	Neff, Michael D.	224 East Matthews, Jonesboro 72401	972-4288
EM.....	Peeler, Malcolm O.	224 East Matthews, Jonesboro 72401	972-4288
GS.....	Piat, Robert D.	3100 Apache Drive, Jonesboro 72401	972-8470
FP.....	Plunk, Hermie G.	5005 East Nettleton, Jonesboro 72401	932-1181
GP.....	Poole, Grover D.	Post Office Box 10, Jonesboro 72401	932-2634
P.....	Price, Edwin F.	Post Office Box 5033, Jonesboro 72401	972-0290
PD.....	Rainwater, W. T.	505 East Matthews, Jonesboro 72401	935-6012
FP.....	Raney, Bascom P.	403 East Matthews, Jonesboro 72401	935-5529
OBG.....	Reid, E. Paul	3100 Apache Drive, Jonesboro 72401	972-6740
FP.....	Robbins, Robert A.	208 Cobean Boulevard, Box 8, Lake City 72437	237-4396
FP.....	Robinette, James M.	801 Osler Drive, Jonesboro 72401	932-2423
D.....	Rogers, James F.	406 East Washington, Jonesboro 72401	935-4755
GS.....	Rusher, Albert H.	Post Office Box 51, Jonesboro 72401	972-1960
OBG.....	St. Clair, John T., Jr.	505 East Matthews, Jonesboro 72401	935-3990
GS.....	Sanders, James W.	505 East Matthews, Jonesboro 72401	932-4875
NS.....	Sapiro, Gary S.	223 East Jackson, Jonesboro 72401	972-8032
ORS.....	Schranitz, James L.	830 Cobb, Jonesboro 72401	972-8040
U.....	Scriber, Ladd J.	812 Cobb, Jonesboro 72401	932-2926
FP.....	Sears, Larry C.	924 South Main, Jonesboro 72401	972-8181
FP.....	Sears, V. Glenn	924 South Main, Jonesboro 72401	972-8181
RD.....	Shanlever, R. C.	1103 Wilkins, Jonesboro 72401 (Res.)	932-2450
ORS.....	Shanlever, William T.	806 Jeter Drive, Jonesboro 72401	972-1640
GP.....	Smith, Floyd A., Jr.	415 West Main, Trumann 72472	483-6411

Type of Practice	Member's Name	Address	Telephone Number
GP	Smith, Vestal B.	Post Office Box 614, Marked Tree 72365	358-2811
AN	Sparks, E. Barrett	818 Cobb, Jonesboro 72401	932-4211
PTH	Stainton, R. M., Jr.	411 East Matthews, Jonesboro 72401	932-7430
FP	Stallings, Joe H., Jr.	417 East Matthews, Jonesboro 72401	972-0550
FP	Swingle, Charles G.	Post Office Box 267, Marked Tree 72365	358-2036
FP	Taylor, G. Wayne	211 East Matthews, Jonesboro 72401	972-1570
IM	Taylor, Robert D.	311 East Matthews, Jonesboro 72401	935-4150
FP	Tedder, Michael E.	3100 Apache Drive, Jonesboro 72401	972-1810
FP	Thomas, James F.	Southgate Plaza, Jonesboro 72401	935-8510
OPH	Utley, Phillip M.	920 South Main, Jonesboro 72401	932-8221
FP	Verser, Joe	Post Office Box 106, Harrisburg 72432	578-5443
PTH	Vollman, Don B., Jr.	411 East Matthews, Jonesboro 72401	932-7430
OPH	Webb, James W.	920 South Main, Jonesboro 72401	932-8221
U	Williams, E. Walden	812 Cobb, Jonesboro 72401	932-2926
FP	Williams, John R.	223 East Jackson, Jonesboro 72401	972-0063
GS	Wilson, Francis M.	505 East Matthews, Jonesboro 72401	932-1987
PTH	Wilson, Joseph T., Jr.	411 East Matthews, Jonesboro 72401	932-7430
FP	Winters, W. Lee	2113 Indian Trails, Jonesboro 72401 (Res.)	935-4824
GP	Wisdom, G. Durwood	505 East Matthews, Jonesboro 72401	932-8121
FP	Young, S. Morris	801 Osler Drive, Jonesboro 72401	932-2423
OTO	Young, William C., Jr.	808 South Church, Jonesboro 72401	932-6799

#### CRAWFORD COUNTY

IM	Crowley, Kevin P.	Post Office Box 664, Van Buren 72956	474-5061
FP	Darden, L. R.	Post Office Box 623, Van Buren 72956	474-2336
FP	Edds, Millard C.	1103 Chestnut, Van Buren 72956	474-2361
IM	Edwards, Henry N.	Post Office Box 664, Van Buren 72956	474-5061
RD	Hopkins, Ed G.	Route 2 Box 332, Van Buren 72956 (Res.)	474-1340
O8G	McHattie, Thomas J.	Post Office Box 1517, Van Buren 72956	474-3424
GP	Sasser, Louis G., III	Post Office Box 478, Alma 72921	632-3855
GP	Shearer, F. E.	Post Office Box 458, Alma 72921	632-3555
GP	Stone, Kenneth I.	Post Office Box 359, Van Buren 72956	474-6832
GP	Stone, Marcia	Post Office Box 359, Van Buren 72956	474-6832
FP	Travis, Aubrey L.	Post Office Box 359, Van Buren 72956	474-6832

#### CRITTENDEN COUNTY

PD	Adwell, C. Edward	228 Tyler, West Memphis 72301	735-0833
IM	Aertker, Roger C.	228 Tyler, West Memphis 72301	735-0833
GYN	Arnold, Sidney W.	228 Tyler, West Memphis 72301	735-0836
IM	Croom, D. Wayne	Post Office Box 1596, West Memphis 72301	735-3842
GP	Deneke, Milton D.	Post Office Box 687, West Memphis 72301	735-1170
PD	Evans, Loraine J.	228 Tyler, West Memphis 72301	732-1191
O8G	Ferguson, T. Murray	200 South Rhodes, West Memphis 72301	735-2150
O8G	Ford, Robert C., Jr.	200 South Rhodes, West Memphis 72301	735-2150
FP	Hamilton, Ralph B.	300 South Rhodes, West Memphis 72301	735-1170
PD	Haynes, Max G.	228 Tyler, West Memphis 72301	732-1191
IM	Herring, William T.	228 Tyler, West Memphis 72301	735-6803
GS	Jay, Gilbert D., III	200 South Rhodes, West Memphis 72301	735-4612
OPH	Kennedy, Keith B.	316 Tyler, West Memphis 72301	735-7680
FP	Klut, Joseph	228 Tyler, West Memphis 72301	735-0833
GS	Lanford, H. G.	308 South Rhodes, West Memphis 72301	735-3664
ORS	L'Heureux, Guy J.	228 Tyler, West Memphis 72301	732-3836
FP	Lubin, Milton	200 South Rhodes, West Memphis 72301	735-3919
IM	Murfin, Wesley W.	228 Tyler, West Memphis 72301	735-0833
FP	McGuire, Sam A., III	200 South Rhodes, West Memphis 72301	735-3919
IM	Peeples, Chester W., Jr.	228 Tyler, West Memphis 72301	735-1973
GS	Schoettle, Glenn P., Sr.	308 South Rhodes, West Memphis 72301	735-3664
FP	Shrader, Floyd R.	200 South Rhodes, West Memphis 72301	735-3945
GP	Smith, Bedford W.	300 South Rhodes, West Memphis 72301	735-1170
IM	Taylor, C. Herbert	228 Tyler, West Memphis 72301	735-2069
R	Utley, L. Thomas	200 Tyler, West Memphis 72301	735-1500
O8G	Westbrook, H. Wade	228 Tyler, West Memphis 72301	732-2531
IM	Wolejko, Raymond E.	228 Tyler, West Memphis 72301	735-0833
FP	Wright, William J.	210 Shoppingway, Suite A, West Memphis 72301	735-8751

#### CROSS COUNTY

GP	Beaton, K. E.	Post Office Box 158, Wynne 72396	238-2321
GP	Bethell, Robert D.	Post Office Box 158, Wynne 72396	238-2321
FP	Burks, Willard G.	Post Office Box 158, Wynne 72396	238-2321
GP	Crain, Vance J.	Post Office Box 158, Wynne 72396	238-2321
GP	Hayes, Robert A.	411 South Falls Boulevard, Wynne 72396	238-3261
FP	Jacobs, James R.	411 South Falls Boulevard, Wynne 72396	238-3261
FP	Young, John H.	411 South Falls Boulevard, Wynne 72396	238-3261

#### DALLAS COUNTY

FP	Delamore, John H.	Post Office Box 351, Fordyce 71742	352-7117
FP	Howard, Don G.	Post Office Box 506, Fordyce 71742	352-3151
FP	Nutt, Hugh A.	110 North Clifton, Fordyce 71742	352-5144
GP	Taylor, George D.	Post Office Box 36, Sparkman 71763	678-2406

#### DESHA COUNTY

GP	Harris, Howard R.	207 South Elm, Dumas 71639	382-4425
FP	Hoagland, Robert A.	145 West Waterman, Dumas 71639	382-4878
FP	Money, William L., Jr.	207 South Elm, Dumas 71639	382-4425
GP	Moss, Swan B.	Post Office Box 652, McGehee 71654	222-3141
FP	Prosser, Robert L., III	Post Office Box 707, McGehee 71654	222-6131
FP	Robinson, Guy U.	207 South Elm, Dumas 71639	382-4425
GP	Turney, Lonnie R.	101 South 3rd, McGehee 71654	222-4044
FP	Young, James E.	Post Office Box 707, McGehee 71654	222-6131

#### DREW COUNTY

PD	Austin, L. K.	711 H. L. Ross Drive, Monticello 71655	367-6832
GP	Binn, Van C.	203 East Trotter, Monticello 71655 (Res.)	367-3531
FP	Busby, Arlee K.	733 Roberts Drive, Monticello 71655	367-3246
FP	David, Andrew E.	750 H. L. Ross Drive, Monticello 71655	367-6231
FP	Holder, James B., Jr.	416 South Main, Monticello 71655	367-6867
GP	Price, Johnnie P.	232 South Main, Monticello 71655	367-2473
FP	Wallick, Paul A.	906 Roberts Drive, Monticello 71655	367-6867
FP	Wilson, Harold F.	906 Roberts Drive, Monticello 71655	367-6868

#### FAULKNER COUNTY

FP	Abrams, Joe A.	#5 Beechwood, Cabot 72023 (Res.)	843-6755
RD	Archer, Charles A., Jr.	411 Western Avenue, Conway 72032 (Res.)	329-3412



Type of Practice	Member's Name	Address	Telephone Number
FP	Banister, Bob G.	923 Parkway, Conway 72032	329-3824
AN	Beasley, Margaret D.	Post Office Box 404, Conway 72032	329-2946
FP	Beasley, T. O.	Post Office Box 1386, Conway 72032	329-2946
ADM	Benafield, Robert B.	Post Office Box 2181, Little Rock 72203	378-2356
GP	Daniel, Sam V.	574 Locust, Conway 72032	329-6111
FP	Dobbs, John C.	Post Office Box 1327, Conway 72032	329-2948
FP	Doss, John R.	Post Office Box 1386, Conway 72032	329-2946
IM	Furrow, William C.	Post Office Box 1367, Conway 72032	327-1325
R	Garrison, James S.	Conway Memorial Hospital, Conway 72032	329-3831, Ext. 185
FP	Gordy, Fred, Jr.	552 Locust, Conway 72032	329-6881
OPH	Hendrickson, Richard	1504 Caldwell, Conway 72032	327-4444
OPH	Magie, J. J.	Post Office Box 1284, Conway 72032	327-4444
FP	Ross, Rex W.	Post Office Box 1327, Conway 72032	329-2948
FP	Smith, John D.	923 Parkway, Conway 72032	329-3824
GP	Smith, Lander A.	923 Parkway, Conway 72032	329-3824

#### FRANKLIN COUNTY

GP	Calaway, Robert L.	Post Office Box C, Mulberry 72947	997-1484
FP	Gibbons, David L.	Post Office Box 136, Ozark 72949	667-4165
PD	Jeffers, Robert G.	317 West Commercial, Ozark 72949	667-4021
IM	Jefferson, Christina M.	317 West Commercial, Ozark 72949	667-4021
PD	Jefferson, Thomas C.	317 West Commercial, Ozark 72949	667-4021
ADM	Long, C. C.	Post Office Box 1208, Fort Smith 72902	782-8218

#### GARLAND COUNTY

IM	Adams, Frank M.	236 Central, Hot Springs 71901	623-8751
IM	Arnold, W. O.	236 Central, Hot Springs 71901	624-1397
U	Aspell, Robert W.	304 St. Louis Place, Hot Springs 71901	321-9013
OTO	Atkinson, Robert H.	303 Central Tower Building, Hot Springs 71901	623-6101
R	Bohnen, Loren O.	911 West Grand, Hot Springs 71901	623-6693
IM	Bond, John B.	505 West Grand, Hot Springs 71901	624-5697
OTO	Borg, Robert V.	100 Ridgeway Place, Hot Springs 71901	624-5422
OPH	Bracken, Ronald J.	505 West Grand, Hot Springs 71901	624-4478
GS	Brunner, John H.	101 Whittington, Hot Springs 71901	321-2229
U	Burrow, Thomas E.	903 West Grand, Hot Springs 71901	623-8110
RD	Burton, Frank M.	2300 Central, Hot Springs 71901 (Res.)	623-8323
U	Burton, James F.	101 Whittington, Hot Springs 71901	321-2229
D	Cates, Jack A.	99 Little Pine, Hot Springs 71901	624-0673
GS	Chamberlain, Joe W.	330 Sixth, Hot Springs 71901	623-4477
GS	Chamberlain, Warren W.	330 Sixth, Hot Springs 71901	623-4477
RHU	Clardy, Edgar K.	116 Pecan, Hot Springs 71901 (Res.)	623-9215
RD	Daniel, Richard L.	125 Carl Drive #58, Hot Springs 71901 (Res.)	623-9753
IM	Dembinski, T. Henry	805 1/2 Central, Hot Springs 71901	623-9781
OPH	Dodson, John W.	505 West Grand, Hot Springs 71901	623-4541
GE	Dunn, Richard W.	236 Central #405, Hot Springs 71901	623-4898
ORS	Durham, Thomas M.	505 West Grand, Hot Springs 71901	623-7717
RD	Edwards, G. A.	1 Magda Lane, Hot Springs Village 71901 (Res.)	922-0552
GS	Eisele, W. Martin	101 Whittington, Hot Springs 71901	321-2229
R	Fore, Robert W.	911 West Grand, Hot Springs 71901	623-6693
GP	Fotioo, George J.	505 Central Tower Building, Hot Springs 71901	623-5121
GS	French, James H.	101 Whittington, Hot Springs 71901	321-2229
FP	Gardial, J. Richard	125 Greenwood, Hot Springs 71901	623-3373
FP	Gardner James L.	125 Greenwood, Hot Springs 71901	623-0904
RD	Garner, Onyx P.	Post Office Box 428, Lake Hamilton 71951	525-8752
FP	Graham, Richard F.	505 West Grand, Hot Springs 71901	623-4391
OTO	Griffin, James E.	100 Ridgeway, Hot Springs 71901	624-5422
#	Gupta, Surinder N.	Hot Springs	
OBG	Haggard, John L.	101 Whittington, Hot Springs 71901	321-2229
OTO	Harper, Edwin L.	100 Ridgeway, Hot Springs 71901	624-5422
RD	Hebert, Gaston A.	802 Prospect, Hot Springs 71901 (Res.)	623-7216
GS	Hill, Robert L.	905 West Grand, Hot Springs 71901	623-9581
FP	Hollis, Thomas H.	125 Greenwood, Hot Springs 71901	623-3373
	Hoyt, Jerry L.	Caddo, Oklahoma	
D	Irwin, William G.	Post Office Box 2588, Hot Springs 71901	321-9455
GYN	Jackson, Haynes G.	Post Office Box 2067, Hot Springs 71901	623-6628
OBG	Jackson, Haynes G., Jr.	Post Office Box 2067, Hot Springs 71901	623-6628
CD	Jayaraman, K. K.	2513 Malvern Avenue, Hot Springs 71901	321-2513
PTH	Jayaraman, Vilasini D.	Post Office Box 1460, Hot Springs 71901	623-2518
OPH	Johnston, Gaither C.	99 Little Pine, Hot Springs 71901	624-7106
GS	Kaler, Ron A.	905 West Grand, Hot Springs 71901	623-9581
GP	Keadle, William R.	Post Office Box P, Glenwood 71943	356-3155
OBG	Kimberlin, G. Dan.	101 Whittington, Hot Springs 71901	321-2229
ORS	Kincheloe, Dale	211 Hobson, Hot Springs 71901	321-2663
RD	King, Leeman H.	610 Ramble, Hot Springs 71901 (Res.)	623-8185
AN	Klugh, Walter G., Jr.	300 St. Louis Place, Hot Springs 71901	623-9216
IM	Knight, Patrick L.	600 Main, Hot Springs 71901	623-1120
FP	Koehn, Martin A.	328 Quaoaw, Hot Springs 71901	321-9292
PTH	Lee, W. R.	Post Office Box 1460, Hot Springs 71901	623-2518
GP	Lovell, Clarence R.	414 Albert Pike, Hot Springs 71901	624-1211
IM	Maruthur, Gopakumar	805 Central Tower Building, Hot Springs 71901	623-1545
IM	Mashburn, William R.	99 Little Pine, Hot Springs 71901	623-4453
GS	Meek, Gary N.	905 West Grand, Hot Springs 71901	623-9581
R	Munos, Louis R.	911 West Grand, Hot Springs 71901	623-6693
ORS	Murray, DuBose	505 West Grand, Hot Springs 71901	623-7717
ORS	McConkie, Stuart B.	715 West Grand, Hot Springs 71901	623-5300
GYN	McCrary, Robert F.	505 West Grand, Hot Springs 71901	321-2217
PD	McFarland, Louis R.	211 Hobson, Hot Springs 71901	321-1314
GP	McMahan, James C.	306 Albert Pike, Hot Springs 71901	624-2111
PD	Newton, Doane M.	236 Woodbine, Hot Springs 71901	321-2546
OBG	Pappas, Deno P.	101 Whittington, Hot Springs 71901	321-2229
GP	Parkerson, Carl R.	300 Woodbine, Hot Springs 71901	624-3379
GP	Parkerson, Cecil W.	1421 Central, Hot Springs 71901	624-3341
IM	Patterson, Ralph M.	236 Central, Hot Springs 71901	624-5567
AN	Peoples, Raymond E.	310 Park, Hot Springs 71901	624-3868
GP	Power, Allyn R.	236 Central, Hot Springs 71901	623-3102
FP	Queen, George P.	125 Greenwood, Hot Springs 71901	623-3373
OBG	Rainwater, W. Sloan	101 Whittington, Hot Springs 71901	321-2229
#	Reed, Lon E.	Hot Springs	
PM	Rosenzweig, Joseph L.	Post Office Box 1358, Hot Springs 71901	624-4411
GS	Sammons, Vernon E., Jr.	905 West Grand, Hot Springs 71901	623-9581
GP	Sanders, Hallman E.	Post Office Box 1358, Hot Springs 71901	624-4411
GP	Seifert, Kenneth A.	8 DeSoto Center, Hot Springs Village 71901	922-0540
FP	Simpson, John B.	328 Quapaw, Hot Springs 71901	321-9292
#	Smith Oliver A.	Houston, Texas	
R	Springer, Melvin R., Jr.	911 West Grand, Hot Springs 71901	623-6693
R	Springer, William Y.	911 West Grand, Hot Springs 71901	623-6693
FP	Stecker, Elton H.	1315 Central, Hot Springs 71901	624-5206

Type of Practice	Member's Name	Address	Telephone Number
FP.....	Stecker, Rheeta.....	1315 Central, Hot Springs 71901.....	624-5206
RD.....	Stough, D. B.....	819 Prospect, Hot Springs 71901 (Res.).....	623-4265
D.....	Stough, D. B., III.....	99 Little Pine, Hot Springs 71901.....	625-0673
OPH.....	Thomas, Al.....	Post Office Drawer D, Hot Springs 71901.....	624-1204
OBG.....	Thompson, Thomas P., Jr.....	101 Whittington, Hot Springs 71901.....	321-2229
PD.....	Trieschmann, John W.....	Post Office Box 2458, Hot Springs 71901.....	321-2546
RD.....	Wade, H. King, Jr.....	118 Trivista Right, Hot Springs 71901 (Res.).....	623-9426
OPH.....	Wallace, Thomas R.....	505 West Grand, Hot Springs 71901.....	624-0609
P.....	Watermann, Eugene.....	Post Office Box 1106, Hot Springs 71901.....	624-7111
U.....	Woodward, Philip A.....	903 West Grand, Hot Springs 71901.....	623-8110
OM.....	Wright, Jack.....	Post Office Box 128, Malvern 72104.....	844-4331, Ext. 291

#### GRANT COUNTY

GP.....	Irvin, Jack M.....	205 West High, Sheridan 72150.....	942-3171
FP.....	Paulk, Clyde D.....	Post Office Box 307, Sheridan 72150.....	942-5155

#### GREENE-CLAY COUNTY

R.....	Baker, Augustus J.....	Post Office Box 339, Paragould 72450.....	236-7733, Ext. 156
GP.....	Baker, Clark M.....	115 West Court, Paragould 72450.....	236-6356
PTH.....	Boggs, Dwight F.....	#1 Medical Drive, Paragould 72450.....	239-4046
FP.....	Bonner, J. Darrell.....	1015 West Kingshighway, Paragould 72450.....	239-4076
FP.....	Collier, George H., Jr.....	Post Office Box 361, Paragould 72450.....	236-8752
FP.....	Collier, Jon D.....	1514 West Kingshighway, Paragould 72450.....	236-6911
GP.....	Crow, Asa A.....	#1 Medical Drive, Paragould 72450.....	239-8504
FP.....	Duckworth, Hillard R.....	425 West Jackson, Piggott 72454.....	598-2237
GP.....	Futrell, J. B.....	414 West 2nd, Rector 72461.....	595-3332
OPH.....	Hardcastle, R. Lowell.....	#1 Medical Drive, Paragould 72450.....	236-6948
GP.....	Harper, Bland R.....	Post Office Box 227, Monette 72447.....	486-2131
ORS.....	Hazzard, Marion P.....	#1 Medical Drive, Paragould 72450.....	236-6996
FP.....	Hobby, George A.....	#1 Medical Drive, Paragould 72450.....	239-8579
GS.....	Lawson, J. Larry.....	#1 Medical Drive, Paragould 72450.....	239-5916
AN.....	Martin, Richard O.....	Post Office Box 339, Paragould 72450.....	236-7733, Ext. 194
FP.....	Mitchell, Bennie E.....	901 West Kingshighway, Paragould 72450.....	239-8576
FP.....	Muse, Jerry L.....	425 West Jackson, Piggott 72454.....	598-2237
RD.....	McKelvey, Earle D.....	319 Grandview, Clarksville 72830 (Res.).....	754-2382
GP.....	Page, Billie C.....	#1 Medical Drive, Paragould 72450.....	236-2364
GP.....	Price, Robert E.....	130 South 14th, Paragould 72450.....	239-8549
R.....	Purcell, Donald I.....	Post Office Box 339, Paragould 72450.....	239-8431
PTH.....	Richmond, Jack G.....	Post Office Box 339, Paragould 72450.....	236-7733
GS.....	Sellers, John Robert.....	#1 Medical Drive, Paragould 72450.....	239-5926
FP.....	Shedd, Leonus L.....	1015 West Kingshighway, Paragould 72450.....	239-4076
FP.....	Shotts, C. Mack.....	#1 Medical Drive, Paragould 72450.....	239-8505
PD.....	Shotts, Vern Ann.....	1015 West Kingshighway, Paragould 72450.....	239-4076
FP.....	Watson, Sam D.....	901 West Kingshighway, Paragould 72450.....	236-8591
IM.....	White, Robert B.....	#1 Medical Drive, Paragould 72450.....	239-9549
FP.....	Williams, Jacob M.....	1015 West Kingshighway, Paragould 72450.....	239-4076

#### HEMPSTEAD COUNTY

OT.....	Branch, James W., Sr.....	426 South Main, Hope 71801.....	777-4636
OBG.....	Garrett, George C., Jr.....	405 West 16th, Hope 71801.....	777-6722
FP.....	Harris, C. Lynn.....	Post Office Box 687, Hope 71801.....	777-2321
GP.....	Harris, Lowell O.....	Post Office Box 550, Hope 71801.....	777-2131
FP.....	Holt, Forney G.....	300 East Sixth, Texarkana 75502.....	774-3211, Ext. 222
GS.....	Martindale, James G.....	116 South Main, Hope 71801.....	777-3464
GP.....	McKenzie, Jim.....	Post Office Box 687, Hope 71801.....	777-2321
R.....	Stevens, David G.....	Post Office Box 460, Hope 71801.....	777-2323
FP.....	Wright, George H.....	405 West 16th, Hope 71801.....	777-6722

#### HOT SPRING COUNTY

GP.....	Brashears, Larry B.....	1234 South Main, Malvern 72104.....	332-5245
FP.....	Clark, Curtis B.....	294 Summar Street, Jackson, Tennessee 38301.....	901 423-1935
FP.....	Cobb, Russell W.....	1420 Potts, Malvern 72104.....	332-3112
GP.....	Cole, John W.....	725 East Page, Malvern 72104 (Res.).....	332-5641
FP.....	Ellis, C. Randolph.....	1004 South Main, Malvern 72104.....	332-6941
GP.....	Kersh, Noah B.....	1518 McBee, Malvern 72104.....	337-7533
GP.....	McCray, Raymond V.....	214 East Highland, Malvern 72104.....	332-2704
FP.....	Peters, Claude F.....	1420 Potts, Malvern 72104.....	332-2521
FP.....	Vaughan, John A.....	115 East Highland, Malvern 72104.....	332-2371
FP.....	White, Robert H.....	1004 Dyer, Malvern 72104.....	332-3664

#### HOWARD-PIKE COUNTY

GP.....	Chambers, William H.....	Post Office Box 1750, Nashville 71852.....	845-4041
GS.....	Hearnsberger, John.....	Post Office Box 88, Nashville 71852.....	845-1761
GP.....	Jones, W. J.....	Post Office Box 49, Glenwood 71943.....	356-3921
FP.....	King, Joe D.....	Post Office Box 549, Nashville 71852.....	845-1933
FP.....	Peebles, Samuel W.....	120 West Sybert, Nashville 71852.....	845-4676
FP.....	Smith, U. Lee.....	Post Office Box 807, Nashville 71852.....	845-3880
GP.....	Turbeville, J. O.....	Post Office Box 434, Murfreesboro 71958.....	285-2182
GP.....	Vu, Trong V.....	Post Office Box 33, Dierks 71833.....	286-3154
GP.....	Ward, Hiram T.....	Post Office Box 319, Murfreesboro 71958.....	285-2491
FP.....	White, Phillip L.....	Post Office Box 538, Murfreesboro 71958.....	285-3118
GP.....	Wilmoth, Marion H.....	Post Office Box 804, Nashville 71852.....	845-4780

#### INDEPENDENCE COUNTY

GP.....	Baker, J. R.....	Post Office Box 2116, Batesville 72501.....	793-5251
IM.....	Baxley, Paul J.....	Post Office Box 2707, Batesville 72501.....	793-5221
FP.....	Beck, Carl T.....	Post Office Drawer J, Mountain View 72560.....	269-3834
R.....	Bess, Lloyd G.....	929 Broad Street, Batesville 72501.....	793-2207
FP.....	Davidson, Dennis O.....	Post Office Box 2116, Batesville 72501.....	793-5251
U.....	Day, Charles H.....	Post Office Box 2116, Batesville 72501.....	698-1808
FP.....	Gray, W. Paul.....	Post Office Box 2437, Batesville 72501.....	793-2321
PTH.....	Hill, John M., Jr.....	1710 Harrison, Batesville 72501.....	698-1861, Ext. 264
OPH.....	Jones, Edward T.....	180 North 5th, Batesville 72501.....	793-5257
RD.....	Ketz, Wesley J.....	Post Office Box 2695, Batesville 72501 (Res.).....	793-2100
RD.....	Krygier, Albin J.....	306 Royal Drive, Horseshoe Bend 72512 (Res.).....	676-5865
FP.....	Lytle, Jim E.....	Post Office Box 2116, Batesville 72501.....	793-6663
GP.....	Moody, Lackey G.....	Post Office Box 2335, Batesville 72501.....	793-6887
R.....	McClain, C. M., Jr.....	929 Broad Street, Batesville 72501.....	793-2207
FP.....	Raney, Troy.....	Post Office Box 83, Cave City 72521.....	283-5762
FP.....	Scott, John G.....	Post Office Box 2116, Batesville 72501.....	793-5251
GP.....	Slaughter, Bob L.....	Post Office Box 2416, Batesville 72501.....	793-2540
FP.....	Smith, Bob G.....	Post Office Box 2116, Batesville 72501.....	793-9352
GS.....	Stalker, James M.....	Post Office Box 2575, Batesville 72501.....	793-5205
GS.....	Strickland, N. E.....	1710 Harrison, Batesville 72501.....	698-1846



Type of Practice	Member's Name	Address	Telephone Number
GP	Tatum, Harold M.	Post Office Box 126, Melbourne 72556	368-4344
GP	Taylor, Chaney W.	Post Office Box 2116, Batesville 72501	793-5251
GP	Taylor, Charles A.	Post Office Box 2116, Batesville 72501	793-5251
GP	Tucker, Charles L.	Post Office Box 38, Ash Flat 72513	994-7301
AN	Turner, Samuel R.	3103 Alice Drive, Batesville 72501	698-1861, Ext. 291
FP	Walker, A. T.	Post Office Box 135, Thayer, Missouri 65791	417-264-7121
OBG	Wyatt, Finis Q.	Post Office Box 2116, Batesville 72501	793-5251

#### JACKSON COUNTY

IM	Ashley, John D.	2nd and Laurel, Newport 72112	523-6721
GS	Carney, J. W.	Post Office Box 699, Newport 72112	523-8911
GP	Cook, Joel P.	2nd and Laurel, Newport 72112	523-6721
IM	Dudley, Guilford M.	1205 McLain, Newport 72112	523-8911
GS	Frankum, Jerry M., Jr.	Post Office Box 606, Newport 72112	523-6721
GP	Green, Roger L.	Post Office Box 159, Newport 72112	523-6721
RD	Harris, M. Haymond	501 Walnut, Newport 72112 (Res.)	523-5168
OBG	Jackson, Jabez F., Jr.	1205 McLain, Newport 72112	523-3289
RD	Jackson, Jabez F., Sr.	304 Ash, Newport 72112 (Res.)	523-8314
FP	Junkin, A. Bruce	Post Office Box 69, Newport 72112	523-3666
OR5	Lopez, Ramon E.	1205 McLain, Newport 72112	523-2942
#	Norris, R. O.	Address Unknown	
G5	Poon, Hon K.	1006 McLain, Newport 72112	523-6796
OPH	Stanfield, Wayne	Post Office Box 129, Newport 72112	523-3321
RD	Williams, Thomas E.	12 Park Place, Newport 72112 (Res.)	523-6121
GP	Wright, John C.	1205 McLain, Newport 72112	523-3504

#### JEFFERSON COUNTY

ADM	Adams, Carl H.	Post Office Box 500, Grady 71644	479-3311
RD	Anderson, Charles W.	1411 Olive, Pine Bluff 71601 (Res.)	535-1661
FP	Atnip, Gwyn	1111 West 15th, Pine Bluff 71603	535-3551
FP	Bell, Carl H., Jr.	1602 West 42nd, Pine Bluff 71603	535-4850
ORS	Blackwell, Banks	Post Office Box 1406, Pine Bluff 71613	534-3122
OBG	Bracy, Calvin M.	1704 West 42nd, Pine Bluff 71603	536-7550
U	Brooks, R. Teryl, Jr.	1801 West 40th, Pine Bluff 71603	536-7758
FP	Bryant, R. Frank	1112 South Linden, Pine Bluff 71603	534-4352
OTO	Buckley, J. Wayne	1408 West 43rd, Pine Bluff 71603	535-5719
P	Burford, Thomas G.	4313 West Markham, Little Rock 72201	664-4500
GE	Butler, Robert C.	1624 West 42nd, Pine Bluff 71603	536-7660
PUD	Campbell, James C., Jr.	1604 West 42nd, Pine Bluff 71603	536-8507
FP	Cheek, Ben H.	1515 West 42nd, Pine Bluff 71603	535-2890
PTH	Clark, James F., Jr.	1515 West 42nd, Pine Bluff 71603	535-6800
FP	Coker, L. Randle	Post Office Box 276, Star City 71667	628-4292
IM	Crenshaw, John	4201 Mulberry, Pine Bluff 71603	535-2200
RD	Cunningham, T. J., Jr.	1316 West 29th, Pine Bluff 71603 (Res.)	534-5423
D	Davis, Charles M.	1416 West 43rd, Pine Bluff 71603	535-7477
P	Dean, Lee A.	Post Office Box 1019, Pine Bluff 71613	534-1834
IM	Dedman, John D.	4201 Mulberry, Pine Bluff 71603	535-2200
CD	Deneke, William A.	1612 West 42nd, Pine Bluff 71603	536-3015
OBG	Devil, Talluri S.	1801 West 40th, Pine Bluff 71603	536-0974
G5	Dickins, Robert D.	1003 Cherry, Pine Bluff 71601	534-8141
R	Fendley, Claude E.	Post Office Box 7863, Pine Bluff 71611	534-8651
R	Fuller, Clinton J., III	Post Office Box 7863, Pine Bluff 71611	534-8651
OPH	Glasscock, Robert E.	1706 Doctors Drive, Pine Bluff 71603	534-4357
PD	Green, Horace L.	1420 West 43rd, Pine Bluff 71603	534-6210
OR5	Gullett, Robert R., Jr.	1714 Doctors Drive, Pine Bluff 71603	536-7579
R	Hardin, J. David	Post Office Box 7863, Pine Bluff 71611	535-6800
IM	Harper, William F.	1801 West 40th, Pine Bluff 71603	536-9230
N	Harris, Ruben M.	#3 Southern Pines Cove, Pine Bluff 71603 (Res.)	536-6270
PD	Hart, J. Clyde, Jr.	1420 West 43rd, Pine Bluff 71603	534-6210
OBG	Hayden, Virgil L.	1706 West 42nd, Pine Bluff 71603	535-8180
R	Hegwood, Henri M.	Post Office Box 7863, Pine Bluff 71611	534-8651
EM	Henderson, Francis M.	1720 Doctors Drive, Pine Bluff 71603	536-6600
PH	Herron, John T.	Post Office Box 7267, Pine Bluff 71611	535-2142
IM	Hoover, S. H.	1708 West 42nd, Pine Bluff 71603	536-7300
OPH	Hughes, L. Milton	1414 West 43rd, Pine Bluff 71603	536-7738
FP	Hussain, Shafqat	1801 West 40th, Pine Bluff 71603	535-4640
U	Hutchison, Ernest L.	1724 West 42nd, Pine Bluff 71603	535-1562
OBG	Hyman, Carl E.	121 East 4th, Pine Bluff 71601	534-3365
N	Ingram, Thomas E.	1726 Doctors Drive, Pine Bluff 71603	535-4803
GS	Irwin, Raymond A., Jr.	1220 West 42nd, Pine Bluff 71603	535-2100
**U	Jacks, David C.	4301 West Markham, Little Rock 72201	661-5240
P	James, William J.	Post Office Box 1019, Pine Bluff 71613	534-1834
CD	Jenkins, B. J.	1612 West 42nd, Pine Bluff 71603	536-3015
AN	Jenkins, Mary Ellen	1410 West 42nd, Pine Bluff 71603	535-5522
R	Joseph, Aubrey S.	Post Office Box 7863, Pine Bluff 71611	534-8651
OBG	Kaipa, Siva P.	1708 Doctors Drive, Pine Bluff 71603	535-1025
AN	Khan, Mahmood A.	1410 West 42nd, Pine Bluff 71603	535-5522
OPH	King, Y. Y.	4800 Hazel, Pine Bluff 71601	536-1897
OTO	Langston, Lloyd G.	1408 West 43rd, Pine Bluff 71603	535-5719
G5	Ligon, Ralph E.	1801 West 40th, Pine Bluff 71603	534-4188
FP	Lindsey, James A.	1310 Cherry, Pine Bluff 71601	541-0770
D	Lum, Don	1606 West 42nd, Pine Bluff 71603	541-0400
#	Malik, Rustam A.	Pine Bluff	
FP	Maynard, Ross E.	115 East 5th, Pine Bluff 71601	534-5732
NEP	Mehta, Shyam P.	1600 West 42nd, Pine Bluff 71603	536-6105
**FP	Mehta, Vimla	1310 Cherry, Pine Bluff 71601	541-0770
GS	Meredith, William R.	1716 West 42nd, Pine Bluff 71603	535-8727
PUD	Miller, Donald L.	1515 West 42nd, Pine Bluff 71603	535-3549
R	Milligan, Monte C.	Post Office Box 7863, Pine Bluff 71611	534-8651
IM	Monroe, Sanford C.	4201 Mulberry, Pine Bluff 71603	535-2200
FP	Morris, Harold J.	1030 Poplar, Pine Bluff 71601	534-0822
R	McDonald, Robert L.	Post Office Box 7863, Pine Bluff 71611	534-8651
PD	McKinney, Daniel C.	1420 West 43rd, Pine Bluff 71603	534-6210
OPH	Nixon, William R.	709 West Sixth, Pine Bluff 71601	534-2624
IM	Nuckolls, J. William	1801 West 40th, Pine Bluff 71603	541-0222
RD	Payne, Virgil L.	4201 Cherry, Apt. 115, Pine Bluff 71603 (Res.)	534-5618
CD	Pearce, Malcolm B.	1612 West 42nd, Pine Bluff 71603	536-3015
FP	Perry, V. Bryan	1722 West 42nd, Pine Bluff 71603	535-4141
GYN	Pierce, J. R.	1712 West 42nd, Pine Bluff 71603	535-3443
FP	Ramsey, David M., III	1310 Cherry, Pine Bluff 71601	541-0770
FP	Raney, Oliver C.	1720 West 42nd, Pine Bluff 71603	534-5861
ORS	Reed, E. Frank	916 Cherry, Pine Bluff 71601	535-0121
PD	Reid, Lloyene B.	1420 West 43rd, Pine Bluff 71603	534-6210
GS	Rittelmeyer, Clarence M.	1716 West 42nd, Pine Bluff 71603	535-8727
OBG	Roaf, Sterling	1310 Linden, Pine Bluff 71603	536-4602
G5	Roberson, George V.	1801 West 40th, Pine Bluff 71603	535-2716
N	Roberts, Dave A.	1726 Doctors Drive, Pine Bluff 71603	535-4803
GP	Robinette, Joseph S.	1722 Doctors Drive, Pine Bluff 71603	535-2372
GE	Rogers, Henry L.	1624 West 42nd, Pine Bluff 71603	536-7660

Type of Practice	Member's Name	Address	Telephone Number
RD	Russell, Allen R.	12 Southern Pines Drive, Pine Bluff 71603 (Res.)	534-6481
AN	Samuel, Ferdinand K.	Post Office Box 1272, Pine Bluff 71613	535-7457
GYN	Simmons, Calvin R.	1714 West 42nd, Pine Bluff 71603	535-3213
NS	Simpson, P. B., Jr.	1801 West 40th, Pine Bluff 71603	536-8547
PD	Smith, Paul L.	Post Office Box 1648, Pine Bluff 71613	536-4566
GS	Smith, Robert J.	817 Cherry, Pine Bluff 71601	535-1880
RD	Stern, Howard S.	2404 West 47th Avenue, Pine Bluff 71603 (Res.)	
GS	Sullenberger, A. G.	1726 West 42nd, Pine Bluff 71603	534-4407
#	Talbot, George B.	Pine Bluff	
PTH	Tisdale, Alfred D.	1515 West 42nd, Pine Bluff 71603	535-6800
PD	Townsend, Thomas E.	1420 West 43rd, Pine Bluff 71603	534-6210
IM	Tracy, C. Clyde	4201 Mulberry, Pine Bluff 71603	535-2200
FP	Waheed, Atiya N.	1608 West 42nd, Pine Bluff 71603	536-9700
GS	Wilkins, Walter J., Jr.	1220 West 42nd, Pine Bluff 71603	535-2100
IM	Wineland, H. L.	1710 West 42nd, Pine Bluff 71603	534-3561
A	Worrell, Aubrey M., Jr.	3900 Hickory, Pine Bluff 71603	535-8200
FP	Yalamanchili, R. R.	1310 Cherry, Pine Bluff 71601	541-0770
CHP	Young, Lloyd	Post Office Box 1019, Pine Bluff 71613	534-1834

#### JOHNSON COUNTY

FP	Fraser, Robert E.	Post Office Box 668, Clarksville 72830	754-8384
FP	McAuley, John R.	Post Office Box 668, Clarksville 72830	754-8384
GS	McKelvey, Richard E.	Post Office Box 440, Clarksville 72830	754-6510
FP	Patterson, Jack T.	Post Office Box 668, Clarksville 72830	754-8384
FP	Pennington, Donald H.	Post Office Box 668, Clarksville 72830	754-8384
GP	Shrigley, Guy P.	Post Office Box 70, Clarksville 72830	754-2043
FP	Taylor, George W.	Post Office Box 668, Clarksville 72830	754-8384
GP	West, Boyce W.	Post Office Box 220, Clarksville 72830	754-6661

#### LAFAYETTE COUNTY

GP	Ditsch, Craig E.	Post Office Box 276, Stamps 71860	533-4461
RD	Lee, Willie J.	3104 Crestridge, Texarkana 75503 (Res.)	214-793-2815

#### LAWRENCE COUNTY

GP	Cruse, Edward J.	Post Office Box 116, Black Rock 72415	878-6209
RD	Dickey, Albert B.	704 Northwest 3rd, Walnut Ridge 72476 (Res.)	886-5377
GP	Elders, J. B.	321 Southwest 3rd, Walnut Ridge 72476	886-3162
FP	Hughes, Joe E.	Post Office Box 150, Walnut Ridge 72476	886-3543
IM	Joseph, Ralph F.	Post Office Box 109, Walnut Ridge 72476	886-3211
FP	Lancaster, Ted S.	Post Office Box 719, Walnut Ridge 72476	886-3543
**OPH	Lowery, Robert D.	Tampa, Florida	
R	Smoot, John D.	Post Office Box 934, Jonesboro 72401	892-4511
FP	Spades, Sebastian A.	1210 Highway 25 West, Walnut Ridge 72476	886-3543

#### LEE COUNTY

GP	Fields, E. C.	77 West Main, Marianna 72360	295-5244
FP	Gray, Dwight W.	110 West Chestnut, Marianna 72360	295-3131
FP	McLendon, Mac	Post Office Box 794, Marianna 72360	295-2711
GP	Waddy, Leon M., Jr.	530 West Atkins Boulevard, Marianna 72360	295-5225

#### LINCOLN COUNTY

#	Freeland, James W.	Star City	
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#### LITTLE RIVER COUNTY

FP	Armstrong, James D.	Post Office Box 397, Ashdown 71822	898-3306
GP	Gillean, Myra M.	2nd and Main, Ashdown 71822	898-3306
RD	Peacock, Norman W., Jr.	Peacock Addition, Ashdown 71822 (Res.)	898-3353
FP	Shelton, Joe G., Jr.	Post Office Box 397, Ashdown 71822	898-3306

#### LOGAN COUNTY

PD	Asad, Younis A.	114 West 4th, Booneville 72927	675-2455
FP	Boissinot, Pierre	Post Office Box 626, Paris 72855	963-6181
FP	Daniel, William R.	114 West 4th, Booneville 72927	675-2455
FP	Enns, Wayne P.	Post Office Box 626, Paris 72855	963-6181
GP	Harbison, James D.	Post Office Box 327, Booneville 72927	675-2121, Ext. 20
FP	Roberts, William J.	114 West 4th, Booneville 72927	675-2455
GP	Smith, James T.	Post Office Box 286, Paris 72855	963-2191
GP	Ulrich, Guy	Post Office Box 626, Paris 72855	963-6181

#### LONOKE COUNTY

FP	Braswell, Thomas R.	Post Office Box 40, England 72046	842-2553
FP	Camp, Arthur W.	Post Office Box 547, Hazen 72064	255-3321
GP	Gartman, Joseph F.	Post Office Box 450, Carlisle 72024	552-7561
GP	Harris, Willie R.	Post Office Box 40, England 72046	842-2553
GP	Holmes, Byron E.	305 West Front, Lonoke 72086	676-6560
FP	Inman, Fred C., Jr.	Post Office Box K, Carlisle 72024	552-7575
OM	Kimsey, Warren H.	Remington Arms Company, Lonoke 72086	374-2245
CD	Schumann, Gerald M.	Post Office Drawer A, Des Arc 72040	256-4312
GP	Shefa, Ahmad Z.	Post Office Box 182, Lonoke 72086	676-5106
GP	Washburn, C. Yulan	Route 1, Box 219, Ward 72176 (Res.)	843-3335

#### MILLER COUNTY

R	Andrews, A. E.	Post Office Box 689, Texarkana 75501	774-2121
GS	Barnes, Walter C.	300 East Sixth, Texarkana 75502	774-3211
NS	Bohmfolk, George L.	1001 Main, Texarkana 75501	214-794-4196
GS	Bransford, Robert M.	300 East Sixth, Texarkana 75502	774-3211
PD	Burnett, James W.	414 Hazel, Texarkana 75502	774-7301
PD	Burroughs, James C.	300 East Sixth, Texarkana 75502	774-3211
PTH	Chappell, Robert H.	Post Office Box 1288, Texarkana 75501	214-794-8311
FP	Diddy, Edwin V.	Post Office Box 1409, Texarkana 75501	214-792-7151
OBG	Druff, Gerald H.	300 East Sixth, Texarkana 75502	774-3211
GS	Duncan, Donald L.	300 East Sixth, Texarkana 75502	774-3211
ORS	Green, Barry M.	1423 Main, Texarkana 75501	214-794-3661
PD	Hall, Jon D.	300 East Sixth, Texarkana 75502	774-3211
GYN	Harrell, William B., Jr.	Post Office Box 2078, Texarkana 75501	214-792-8231
OBG	Harrison, Jack W.	300 East Sixth, Texarkana 75502	774-3211
GYN	Harrison, James W.	300 East Sixth, Texarkana 75502	774-3211
ORS	Hughes, Mary W.	1001 Main, Texarkana 75501	214-792-6976
RD	Hughes, Robert P.	3935 Texas Boulevard, Texarkana 75503 (Res.)	214-793-3385
IM	Hutcheson, Fred A., Jr.	300 East Sixth, Texarkana 75502	774-3211
GYN	Jones, John Walter	300 East Sixth, Texarkana 75502	774-3211
PTH	Joyce, Frederick E.	Post Office Box 2763, Texarkana 75501	774-2121



Type of Practice	Member's Name	Address	Telephone Number
GP	Kemp, Kariton H.	408 Hazel, Texarkana 75502	774-5181
FP	Kittrell, James B.	1001 Main, Texarkana 75501	214-794-6107
RD	Laws, J. K.	2105 Garland, Texarkana 75502 (Res.)	772-1209
D	Loe, Arlis W.	Post Office Box 1409, Texarkana 75501	214-792-7151
R	McGinnis, Robert S., Sr.	Post Office Box 1409, Texarkana 75501	214-792-7151
O8G	McWilliams, Benjamin A.	300 East Sixth, Texarkana 75502	774-3211
OPH	Rana, Jayant B.	1411 College Drive, Texarkana 75503	214-792-3729
IM	Rodgers, Nathaniel L.	300 East Sixth, Texarkana 75502	774-3211
U	Rountree, Glen A.	300 East Sixth, Texarkana 75502	774-3211
R	Royal, Jack L.	300 East Sixth, Texarkana 75502	774-3211
FP	Short, Harold H.	1400 College Drive, Texarkana 75503	214-793-5671
=	Smith, W. Decker	Texarkana	
GP	Stringfellow, Jerry B.	1205 East 35th, Texarkana 75501	773-6745
RD	Teasley, Gerald H.	1317 Rio Grande, Texarkana 75503 (Res.)	214-794-5245
GS	Tompkins, William C., Jr.	300 East Sixth, Texarkana 75502	774-3211
=	Wicker, Eugene H.	Texarkana	
	Wilhelm, Frieda	Dallas, Texas	
GS	Wren, Herbert B.	Post Office Box 1409, Texarkana 75501	214-792-7151
U	Yarbrough, Charles P.	1102 Main, Texarkana 75501	214-793-5608
GS	Young, Mitchell	1406 College Drive, Texarkana 75503	214-792-8264

#### MISSISSIPPI COUNTY

FP	Biggerstaff, Jerry R.	608 West Lee, Osceola 72370	563-3576
IM	Brock, Charles C., Jr.	527 North Sixth, Blytheville 72315	763-1520
U	Campbell, Charles E., Jr.	609 Fulton, Blytheville 72315	763-0855
FP	Cole, C. R.	519 North Sixth, Blytheville 72315	763-1554
FP	Cullom, S. Reggie	608 West Lee, Osceola 72370	563-2608
GP	Elliot, John Q.	Post Office Box 747, Blytheville 72315	763-4548
FP	Fairley, Eldon	Post Office Box 68, Osceola 72370	563-6568
FP	Fairley, Julian R.	Post Office Box 68, Osceola 72370	563-6568
GS	Fergus, R. Scott	Professional Building, Osceola 72370	563-3248
R	Gratz, John F., Jr.	Osceola Memorial Hospital, Osceola 72370	563-7157
GP	Green, William O., Jr.	Post Office Box 268, Blytheville 72315	763-6802
PTH	Hart, Sybil R.	Post Office Box 312, Blytheville 72315	762-3346
R	Hart, Wade A.	Post Office Box 312, Blytheville 72315	762-3342
GP	Holcomb, C. E.	511 North Sixth, Blytheville 72315	763-3922
GP	Hubener, Lemly L.	509 Hutson, Blytheville 72315	762-2021
	Hubener, Louis F.	Gainesville, Florida	
IM	Jones, Herbert	Post Office Box 321, Blytheville 72315	763-8032
IM	Jones, Joe V.	527 North Sixth, Blytheville 72315	763-1520
IM	Massey, Lorenzo D.	Post Office Box 388, Osceola 72370	563-6275
FP	Osborne, Merrill J.	1533 North 10th, Blytheville 72315	762-5360
GP	Pollock, George D.	608 West Lee, Osceola 72370	563-3576
FP	Rhodes, R. F.	608 West Lee, Osceola 72370	563-2608
GP	Rodman, T. N.	Post Office Box 260, Leachville 72438	539-6337
GP	Russell, James D.	3004 West Pine Road, Arkadelphia 71923	246-2471
GS	Sellers, Kenneth D.	10th and Highland, Blytheville 72315	763-1307
FP	Shaneyfelt, E. A.	Post Office Box 630, Manila 72442	561-4744
GS	Sims, H. C., Jr.	525 North 10th, Blytheville 72315	763-0521
OPH	Webb, James J.	Post Office Box 547, Blytheville 72315	762-2131
O8G	Workman, W. Wayne	527 North Sixth, Blytheville 72315	763-8890

#### MONROE COUNTY

FP	David, N. C., Jr.	108 West Ash, Brinkley 72021	734-2212
GP	Miya, Robert T.	106 North New York, Brinkley 72021	734-4847
GP	Pupsta, Benedict F.	Post Office Box 250, Clarendon 72029	747-3321
GP	Stone, Herd E.	Post Office Box A, Holly Grove 72069	462-3393
GP	Walker, Walter L.	Post Office Box 151, Brinkley 72021	734-3242
FP	Williams, J. P., Jr.	127 South New Orleans, Brinkley 72021	734-1331

#### NEVADA COUNTY

GP	Avery, Charles D.	427 East Sixth, Prescott 71857	887-2625
GP	Crow, H. Blake	327 East 2nd South, Prescott 71857	887-3846
RD	Hairston, Glenn G.	327 East 3rd South, Prescott 71857 (Res.)	887-2155
FP	Portis, Richard P.	Post Office Box 442, Prescott 71857	887-6651
FP	Russell, James T.	Post Office Box 442, Prescott 71857	887-6651
FP	Young, Michael C.	Post Office Box 442, Prescott 71857	887-6651

#### OUACHITA COUNTY

IM	Daniel, William A.	Post Office Box 757, Camden 71701	836-8101
IM	Dedman, John L.	415 Hospital Drive, Camden 71701	836-5013
EM	Dobson, Jack T.	2026 Parkwood Lane, Fordyce 71742	352-2488
FP	Drewrey, L. E.	Post Office Box 995, Camden 71701	836-6811
AN	Ellis, Joseph L.	Post Office Box 126, Camden 71701	836-7144
GS	Fohn, Charles H.	415 Hospital Drive, Camden 71701	836-5013
GP	Guthrie, James	Post Office Box 757, Camden 71701	836-8101
FP	Hout, Judson N.	Post Office Box 757, Camden 71701	836-8101
GS	Jameson, J. B., Jr.	Post Office Box 994, Camden 71701	836-5088
FP	Kendall, J. R.	Post Office Box 757, Camden 71701	836-8101
FP	Livingston, Billy B.	225 Jackson, Camden 71701	836-7367
GP	Miller, John H.	816 Clifton, N.W., Camden 71701 (Res.)	836-2549
FP	Nunnally, Robert H.	Post Office Box 757, Camden 71701	836-8101
IM	Ozment, Lowell V.	Post Office Box 757, Camden 71701	836-8101
GYN	Plant, Richard F.	Post Office Box 762, Camden 71701	836-4169
FP	Sanders, Cal R.	Post Office Box 757, Camden 71701	836-8101
R	Thorne, A. E.	Post Office Box 797, Camden 71701	836-1221

#### PHILLIPS COUNTY

FP	Barrow, John H.	614 Oakland, Helena 72342	338-8622
FP	Bell, L. J. Patrick	626 Poplar, Helena 72342	338-8163
OPH	Berger, Alfred A.	801 Perry, Helena 72342	338-8781
=	Butts, James W.	Helena	
FP	Capes, Bernard	Post Office Box 239B, West Helena 72390	572-2621
GP	Ellis, William A., Jr.	603 Porter, Helena 72342	338-3037
GS	Elovitz, Maurice J.	133 Newman Drive, Helena 72342	338-7218
GP	Faulkner, H. N.	513 Porter, Helena 72342	338-7401
GP	Kirkman, C. M. T.	1105 Perry, Helena 72342	338-8712
R	Maxwell, J. Watson	Post Office Box 788, Helena 72342	338-6411
FP	Miller, Robert D., Jr.	616 Elm, Helena 72342	338-8531
GP	McCarty, C. P.	513 Porter, Helena 72342	338-7401
GP	McCarty, Gordon E., Jr.	107 Hickory Hill, Helena 72342	338-8377
GP	McDaniel, M. A.	513 Porter, Helena 72342	338-7401
GP	Oldham, H. B.	Post Office Box 253B, West Helena 72390	572-7581
GP	Paine, William T.	661 Oakland, Helena 72342	572-6413

Type of Practice	Member's Name	Address	Telephone Number
GP	Pham, Anh N.	Post Office Box 278, Marvell 72366	829-3411
AN	Vasudevan, Kanaka	133 Newman Drive, Helena 72342	338-6749
U	Vasudevan, P.	133 Newman Drive, Helena 72342	338-6749
GP	Wise, James E., Jr.	Post Office Box 66, Marvell 72366	829-2386

#### POLK COUNTY

IM	Bell, James P.	608 Hickory, Mena 71953	394-3993
FP	Fried, David D.	Northside Shopping Center, Mena 71953	394-5880
GP	Hefner, David P.	518 Janssen, Mena 71953	394-3550
FP	Redman, Pierre P.	513 Mena, Mena 71953	394-2277
GP	Rogers, Henry N.	600 West 7th, Mena 71953	394-3344
FP	Stephens, Maurice L.	Route 3, Box 324A, Mena 71953	394-6300
GS	Wood, John P.	907 Mena, Mena 71953	394-4221

#### POPE COUNTY

FP	Ashcraft, Ted E.	Post Office Box 1597, Russellville 72801	968-7170
OTO	Austin, Nathan F.	2504 West Main, Russellville 72801	968-5261
GS	Bachman, David S.	3105 West Main Place, Russellville 72801	968-2345
OBG	Battles, Larry D.	3105 West Main Place, Russellville 72801	968-2345
P	Bell, Linda O.	2301 West Main, Russellville 72801	968-3323
U	Bell, Robert A.	2301 West Main, Russellville 72801	968-3323
IM	Berner, Dennis	3105 West Main Place, Russellville 72801	968-2345
AN	Birm, Patricia J.	Post Office Box 785, Russellville 72801	968-5670
PD	Bost, R. Kingsley	3105 West Main Place, Russellville 72801	968-2345
U	Brown, Charles H.	2301 West Main, Russellville 72801	968-3323
R	Burgess, James G.	Post Office Box 1647, Russellville 72801	968-7930
FP	Carier, James M.	3105 West Main Place, Russellville 72801	968-2345
GS	Crumpler, Joe B., Jr.	3105 West Main Place, Russellville 72801	968-2345
OBG	Dunn, Donald L.	3105 West Main Place, Russellville 72801	968-2345
D	Galloway, William W.	1602 West Main, Russellville 72801	968-6969
RD	Gavlas, Frank E.	310 North 2nd, Dardanelle 72834 (Res.)	229-3306
FP	Henry, J. Arnold	3105 West Main Place, Russellville 72801	968-2345
ORS	Honghiran, Ted	2504 West Main, Russellville 72801	968-3200
GP	Kimball, G. Howard	1919 West Main, Russellville 72801	968-3611
R	King, John W.	3203 West Main, Russellville 72801	968-7930
GP	King, W. Ernest	3105 West Main Place, Russellville 72801	968-2345
ORS	Kolb, James M., Jr.	305 Skyline Drive, Russellville 72801	968-2124
FP	Lane, W. H., Jr.	Post Office Box 324, Dover 72837	331-2828
OPH	Lawrence, Frank M.	Post Office Box 400, Russellville 72801	968-2242
OPH	Lovell, Richard K.	Post Office Box 1107, Russellville 72801	968-7302
FP	Lowrey, Douglas H.	809 West Main, Russellville 72801	968-2156
OPH	Lyford, Joe H., Jr.	Post Office Box 1107, Russellville 72801	968-7302
GP	Malone, George E.	Post Office Box 187, Atkins 72823	641-2992
FP	Mauch, E. Jane	3105 West Main Place, Russellville 72801	968-2345
FP	Meyer, Kelly H.	Post Office Box 1597, Russellville 72801	968-3611
RD	Millard, Roy I.	1704 West 3rd Court, Russellville 72801 (Res.)	968-2604
OPH	Mobley, Max J.	Post Office Box 400, Russellville 72801	968-2242
RD	McNamara, William L.	2121 Towson, Fort Smith 72901 (Res.)	785-1441
FP	New, Kenneth O.	3105 West Main Place, Russellville 72801	968-2345
R	Riley, Donald C.	Post Office Box 1647, Russellville 72801	968-7930
PTH	Stolz, Gerald A., Jr.	Post Office Box 925, Russellville 72801	968-6781
FP	Teeter, S. D.	3105 West Main Place, Russellville 72801	968-2345
IM	Thurlby, W. Robert	3105 West Main Place, Russellville 72801	968-2345
IM	Wilkins, Charles F., Jr.	3105 West Main Place, Russellville 72801	968-2345
GP	Williams, David M.	809 West Main, Russellville 72801	968-2156
EM	Young, Sandra S.	1808 West Main, Russellville 72801	968-6211

#### PULASKI COUNTY

AN	Abbott, William W.	500 South University, Little Rock 72205	661-3578
IM	Abraham, James H.	10001 Lile Drive, Little Rock 72205	227-8000
NS	Adamez, John H.	750 Medical Towers Building, Little Rock 72205	225-0880
PUD	Adamson, James S.	890 Medical Towers Building, Little Rock 72205	224-0110
OPH	Alford, T. Dale	5700 West Markham, Little Rock 72205	664-5100
OBG	Allen, D. B.	500 South University, Little Rock 72205	664-4131
OBG	Allen, E. Stewart	1100 North University, Little Rock 72207	664-9191
CDS	Allen, John E., Jr.	1050 Medical Towers Building, Little Rock 72205	227-8300
PS	Allen, Thomas H. "Bill"	413 North University, Little Rock 72205	664-0900
IM	Allison, Jack R.	Japan	
FP	Amir, Jacob	10001 Lile Drive, Little Rock 72205	227-8000
FP	Anderson, Leslie F.	1310 North Center, Lonoke 72086	676-5123
PTH	Araoz, Carlos A.	#1 St. Vincent Circle, Little Rock 72205	661-3000
GS	Armstrong, Howard M.	340 Doctors Park Building, Little Rock 72205	227-7888
PD	Arrington, Robert W.	1721 Maryland, Little Rock 72202	661-5905
PTH	Atkinson, William E., Jr.	#1 St. Vincent Circle, Little Rock 72205	661-8542
RD	Ault, Charles C.	#3 Helen Drive, Sherwood 72116 (Res.)	835-1046
RD	Autry, Daniel H.	1900 North Tyler, Little Rock 72207 (Res.)	664-2332
U	Babayan, Richard J.	4301 West Markham, Little Rock 72201	661-5240
GS	Baber, John C., Jr.	500 South University, Little Rock 72205	664-2434
P	Backus, Joe T.	12115 Hinson Road, Little Rock 72212	227-0680
OT	Bailey, H. A. Ted, Jr.	1200 Medical Towers Building, Little Rock 72205	227-5050
PTH	Baker, Glen F.	4301 West Markham, Little Rock 72201	661-5170
U	Baker, Johnson J.	500 South University, Little Rock 72205	664-4364
IM	Baker, Susan W.	11215 Hermitage, Little Rock 72211	225-2661
PD	Baldwin, Deane G.	500 South University, Little Rock 72205	664-4044
OBG	Baldwin, Maxwell R.	880 Medical Towers Building, Little Rock 72205	224-5050
FP	Ballard, C. E., Jr.	250 Doctors Park Building, Little Rock 72205	224-0102
GYN	Barclay, David L.	500 South University, Little Rock 72205	664-8502
GYN	Bard, David S.	4301 West Markham, Little Rock 72201	661-5923
FP	Barg, Charles D.	100 Doctors Park Building, Little Rock 72205	224-5220
CD	Barlow, Brian E.	#1 St. Vincent Circle, Little Rock 72205	664-5860
IM	Barnes, Larry G.	500 South University, Little Rock 72205	666-0244
U	Barnett, Troy F.	#1 St. Vincent Circle, Little Rock 72205	664-1762
R	Barnhard, Howard J.	4301 West Markham, Little Rock 72201	661-5740
FP	Barron, Edwin N., Jr.	10121 Rodney Parham, Little Rock 72207	225-9222
OBG	Batres, Francisco	500 South University, Little Rock 72205	664-4131
GS	Bauer, Frank M.	500 South University, Little Rock 72205	664-2245
R	Bearden, James R.	1100 Medical Towers Building, Little Rock 72205	227-5240
OPH	Becquet, N. J.	115 West Sixth, Little Rock 72201	375-4419
FP	Belknap, Melvin L.	1801 Maple, North Little Rock 72114	758-1002
RD	Bennett, Eaton W.	1003 Loretta Lane, Little Rock 72207 (Res.)	225-2478
CD	Bennett, F. A.	650 Shackleford Road, Little Rock 72211	224-9001
FM	Berry, Bruce E.	17 Woodstock Court, Little Rock 72207 (Res.)	227-7755
GS	Berry, Frederick B.	1060 Medical Towers Building, Little Rock 72205	224-3424
EM	Bethell, John P., Jr.	Memorial Hospital, North Little Rock 72114	771-3355
FP	Betton, Harold B.	1221 Bishop, Little Rock 72202	376-1160



Type of Practice	Member's Name	Address	Telephone Number
P.	Betts, Charles S.	50 Westwind Drive, North Little Rock 72118.	771-1927
GS.	Bevans, David W., Jr.	406 West Pershing, North Little Rock 72114.	758-1620
#.	Beverly, Nolan F.	Little Rock	
R.	Binet, Eugene F.	300 East Roosevelt, Little Rock 72206.	372-8361, Ext. 383
D.	Biondo, Raymond V.	Post Office Box 921, North Little Rock 72115.	758-2588
CD.	Bishop, William B.	10001 Lile Drive, Little Rock 72205.	227-8000
	Bissada, Nabil K.	Saudi Arabia	
U.	Black, Hal R.	200 Doctors Park Building, Little Rock 72205.	225-9755
GP.	Black, H. Thurston.	123 North Van Buren, Little Rock 72205.	666-0142
GE.	Blackshear, Jack L.	650 Medical Towers Building, Little Rock 72205.	227-8074
ORS.	Blankenship, William F.	1100 North University, Little Rock 72207.	664-5720
PD.	Boellner, Samuel W.	300 Medical Towers Building, Little Rock 72205.	227-4750
CD.	Boger, James E.	690 Medical Towers Building, Little Rock 72205.	1-800-482-1224
NS.	Boop, Warren C., Jr.	4301 West Markham, Slot 507, Little Rock 72201.	661-5270
N.	Bornhofen, John H.	300 Medical Towers Building, Little Rock 72205.	227-4750
PD.	Bost, Roger B.	4301 West Markham, Little Rock 72201.	661-5260
ORS.	Bowker, John H.	12th and Marshall, Little Rock 72201.	227-2555
NM.	Boyd, Charles M.	4301 West Markham, Little Rock 72201.	661-5760
U.	Bradburn, Curry B.	200 Doctors Park Building, Little Rock 72205.	225-9755
R.	Brenner, George H., Jr.	1100 Medical Towers Building, Little Rock 72205.	227-5240
PD.	Briggs, Barnett P.	2805 Foxcroft Square, #403, Little Rock 72207 (Res.).	225-1203
PD.	Briggs, Dale D.	11125 Hermitage Road, Little Rock 72211.	225-9038
IM.	Brinkley, Roy A.	220 Doctors Park Building, Little Rock 72205.	227-6350
OTO.	Brizzolara, A. J.	500 South University, Little Rock 72205.	664-4381
P.	Broach, R. Fred.	12115 Hinson Road, Little Rock 72212.	227-0680
RD.	Brown, Martha M.	2014 Boulevard, Little Rock 72204 (Res.).	663-7697
U.	Brown, T. Duell.	1120 Marshall, Little Rock 72202.	375-3376
GE.	Browning, Donald G.	409 North University, Little Rock 72205.	664-6980
AN.	Browning, Stanley K.	1150 Medical Towers Building, Little Rock 72205.	227-7590
ADM.	Bruce, Thomas A.	4301 West Markham, Little Rock 72201.	661-5350
GS.	Buchanan, F. R.	500 South University, Little Rock 72205.	664-4324
PD.	Buchanan, Gilbert A.	500 South University, Little Rock 72205.	664-4117
GS.	Buchman, Joseph A.	500 South University, Little Rock 72205.	664-9116
HEM.	Bucolo, Anthony P.	500 South University, Little Rock 72205.	661-0060
FP.	Buford, Joe Lee.	1801 Maole, North Little Rock 72114.	758-1002
AN.	Bumpas, Joe H.	500 South University, Little Rock 72205.	664-4532
PTH.	Burger, Robert A.	9600 West 12th, Little Rock 72201.	227-2898
GS.	Burnett, Hugh F.	990 Medical Towers Building, Little Rock 72205.	227-9080
FP.	Burrow, Dennis R.	550 Edgewood, Maumelle 72118.	851-2170
P.	Busby, John V.	12115 Hinson Road, Little Rock 72212.	227-0680
RD.	Byrd, Lucas M., Jr.	36 Lakeshore Drive, Little Rock 72204 (Res.).	565-6046
R.	Caignet, Juan E.	300 East Roosevelt Road, Little Rock 72206.	372-8361, Ext. 383
IM.	Cain, Thomas D.	11215 Hermitage Road, Little Rock 72211.	225-6661
OPH.	Calcote, Robert A.	2500 McCain Place, North Little Rock 72116.	771-1166
GS.	Caldwell, Fred T. Jr.	4301 West Markham, Little Rock 72201.	661-6173
FP.	Calhoon, J. Dale.	Post Office Box 805, Jacksonville 72076.	982-4551
R.	Calhoun, Joseph D.	500 South University, Little Rock 72205.	664-3914
TS.	Campbell, Gilbert S.	4301 West Markham, Little Rock 72201.	661-6177
R.	Campbell, James W.	500 South University, Little Rock 72205.	664-3914
A.	Caplinger, Kelsy J.	Post Office Box 5675, Little Rock 72215.	227-5210
P.	Carnahan, Robert G.	4313 West Markham, Little Rock 72201.	664-4500
FP.	Carson, Lavne E.	300 East Roosevelt Road, Little Rock 72206.	372-8361, Ext. 585
R.	Caruthers, Samuel B., Jr.	1100 Medical Towers Building, Little Rock 72205.	227-2771
GS.	Casali, Robert E.	4301 West Markham, Little Rock 72201.	661-6184
RD.	Cazorl, Alan G.	5117 Edgewood, Little Rock 72207 (Res.).	663-3623
ORS.	Chakales, Harold H.	405 North University, Little Rock 72205.	664-1500
OPH.	Chandler, Billy M.	406 West Pershing, North Little Rock 72114.	758-1651
FP.	Chapman, Jerry C.	Post Office Box 805, Jacksonville 72076.	982-4551
RD.	Chappell, Ewin S.	400 North University, Little Rock 72205 (Res.).	663-4747
FP.	Cheairs, David S.	330 Doctors Park Building, Little Rock 72205.	227-6363
R.	Chisholm, Dan P.	501 South University, Little Rock 72205.	664-3914
U.	Christeson, William W.	300 East Roosevelt Road, Little Rock 72206.	372-8361
ORS.	Christian, John D.	1100 North University, Little Rock 72207.	664-7710
FP.	Chudy, Amail.	1801 Maole, North Little Rock 72114.	758-1002
FP.	Church, B. L.	Post Office Box 246, North Little Rock 72115.	753-1813
OBG.	Church, Marion M.	410 West Pershing, North Little Rock 72114.	758-1022
AN.	Clark, Richard B.	4301 West Markham, Little Rock 72201.	661-5000
OPH.	Cliffon, Cliff.	516 Scott, Little Rock 72201.	374-6338
FP.	Cobb, Jack S.	North Hills Family Clinic, Sherwood 72116.	835-6800
R.	Cockrill, H. Howard, Jr.	500 South University, Little Rock 72205.	664-3914
OTO.	Colclasure, Joe S.	1200 Medical Towers Building, Little Rock 72205.	227-5050
PD.	Collie, William R.	500 South University, Little Rock 72205.	664-4117
**ORS.	Collins, David N.	4301 West Markham, Little Rock 72201.	661-5000
OPH.	Cook, Raymond C.	601 Scott, Little Rock 72201.	375-8273
GS.	Corbell, Carroll E.	500 South University, Little Rock 72205.	663-6339
OBG.	Cornell, Paul J.	500 South University, Little Rock 72205.	664-2277
GP.	Cornett, James K.	5326 West Markham, Little Rock 72205.	664-6603
OPH.	Cosgrove, K. W., Jr.	630 Medical Towers Building, Little Rock 72205.	224-0400
**AN.	Covey, M. Carl, Jr.	4301 West Markham, Slot 515, Little Rock 72201.	661-6114
CRS.	Craig, Marion S.	500 South University, Little Rock 72205.	666-0106
GYN.	Crews, J. Travis.	500 South University, Little Rock 72205.	664-8508
CRS.	Crocker, Charles H.	500 South University, Little Rock 72205.	664-1272
OPH.	Cross, J. B.	500 South University, Little Rock 72205.	666-0126
ORS.	Crow, Joe W.	601 North University, Little Rock 72205.	664-0144
CDS.	Crow, R. Lewis.	600 Medical Towers Building, Little Rock 72205.	227-9434
IM.	Cullen, Philip T.	500 South University, Little Rock 72205.	664-4171
R.	Dalrymple, Glenn V.	1100 Medical Towers Building, Little Rock 72205.	227-2180
GP.	Daugherty, Joe D.	Post Office Box 336, Jacksonville 72076.	982-0576
GP.	Daugherty, John L.	Post Office Box 336, Jacksonville 72076.	982-0576
GS.	Dean, Gilbert O.	1310 Cantrell Road, Little Rock 72202.	372-3661
OPH.	Deer, Philip J., Jr.	8500 West Markham, Little Rock 72205.	224-4701
PD.	Dennis, James L.	4301 West Markham, Little Rock 72201.	661-5689
OTO.	Dickins, John R. E.	1200 Medical Towers Building, Little Rock 72205.	227-5050
NS.	Dickins, Robert D., Jr.	750 Medical Towers Building, Little Rock 72205.	225-0880
ORS.	Dickson, D. Bud.	500 South University, Little Rock 72205.	663-4163
FP.	Dillard, Daniel C.	3500 South University, Little Rock 72204.	562-4838
R.	Diner, Wilma J.	4301 West Markham, Slot 556, Little Rock 72201.	661-5740
R.	Dodd, Doyné.	1100 Medical Towers Building, Little Rock 72205.	227-2771
RD.	Dodge, Eva F.	Quapaw Tower Apartments, Little Rock 72202 (Res.).	374-9349
#.	Dodson, C. Frank, Jr.	Little Rock	
ORS.	Dornenburg, Peter R.	#1 St. Vincent Circle, Little Rock 72205.	661-0350
P.	Douglas, Warren M.	260 Medical Towers Building, Little Rock 72205.	224-2447
U.	Downs, Ralph A.	#1 St. Vincent Circle, Little Rock 72205.	664-1762
PD.	Dungan, W. T.	Ninth and Marshall, Little Rock 72201.	372-1510
FP.	Durham, James W.	Post Office Box 805, Jacksonville 72076.	982-4551
RD.	Easley, Edgar J.	220 Linwood Court, Little Rock 72205 (Res.).	663-5086

Type of Practice	Member's Name	Address	Telephone Number
ORS	Easter, Rex M.	601 North University, Little Rock 72205	666-0144
P	Eckart, Emile P.	4313 West Markham, Little Rock 72201	664-4500
AN	Edge, Otis H.	500 South University, Little Rock 72205	664-8489
GP	Evans, Gilbert C.	4942 West Markham, Little Rock 72205	664-4127
FP	Farmer, Joseph F.	11125 Arcade Drive, Little Rock 72212	225-2594
FP	Farris, Guy R., Jr.	6213 Lee Avenue, Little Rock 72205	664-2115
IM	Fendley, Jack T.	2500 McCain Place, North Little Rock 72116	771-0300
R	Ferris, Ernest J.	4301 West Markham, Little Rock 72201	661-5740
FP	Fewell, Ronald D.	Post Office Box 459, Jacksonville 72076	982-2141
GS	Fielder, Charles R.	406 West Pershing, North Little Rock 72114	758-1620
R	Fincher, Robert L.	1100 Medical Towers Building, Little Rock 72205	227-5240
U	Finkbeiner, Alex E.	4301 West Markham, Little Rock 72201	661-5240
PD	Fiser, Robert H., Jr.	4301 West Markham, Little Rock 72201	661-5905
GP	Fitzgibbon, Carney, Jr.	410 South Martin, Little Rock 72205 (Res.)	666-8861
FP	Flack, James V.	424 North University, Little Rock 72205	664-4810
NS	Flanigan, Stevenson	4301 West Markham, Little Rock 72201	661-5270
NS	Flanigin, Herman F., Jr.	4301 West Markham, Little Rock 72201	661-5270
RD	Fletcher, Elizabeth D.	2000 Magnolia, Apt. 232, Little Rock 72202 (Res.)	666-1248
NS	Fletcher, Thomas M.	500 South University, Little Rock 72205	664-3021
GYN	Floyd, Bill G.	210 Doctors Park Building, Little Rock 72205	224-6770
GS	Ford, George W.	8000 Interstate 30, Little Rock 72209	569-4284
#	Foster, Julian L.	Little Rock	
U	Fraiser, L. P.	200 Doctors Park Building, Little Rock 72205	225-9755
PD	Fraser, Eric A.	516 West Pershing, North Little Rock 72114	758-1530
EM	Frye, Ivan L.	Veterans Administration Hospital, North Little Rock 72114	372-8361, Ext. 7609
OBG	Fuller, Dale	2000 Fendley, North Little Rock 72114	758-3774
#	Fulmer, H. Ray	Little Rock	
OPH	Fulmer, John M.	5410 West Markham, Little Rock 72205	664-3142
CD	Galbraith, Jo Etta	#1 St. Vincent Circle, Little Rock 72205	664-5860
N	Galbraith, Robert C.	300 Medical Towers Building, Little Rock 72205	227-4750
OTO	Gardner, Guy F.	330 Medical Towers Building, Little Rock 72205	227-4863
OTO	Gay, Ellery C., Jr.	1200 Medical Towers Building, Little Rock 72205	227-5050
ORS	Gerdes, Michael H.	804 Wolfe, Little Rock 72201	376-4621, Ext. 244
R	Gettys, Joseph M., Jr.	1100 Medical Towers Building, Little Rock 72205	227-2180
N	Gibson, Gordon L.	300 Medical Towers Building, Little Rock 72205	227-4750
PUD	Giglia, Anthony R.	500 South University, Little Rock 72205	661-9393
NS	Giles, Wilbur M.	750 Medical Towers Building, Little Rock 72205	225-0880
GYN	Gillespie, A. Tharp	500 South University, Little Rock 72205	664-9555
AN	Glenn, Wayne B.	500 South University, Little Rock 72205	664-4532
AN	Glidden, Michael L.	500 South University, Little Rock 72205	661-4180
PTH	Gloster, Elizabeth S.	401 South Monroe, Little Rock 72205	666-0351
END	Glover, Lawson E., Jr.	10001 Lile Drive, Little Rock 72205	227-8000
R	Glover, W. Clyde	1100 Medical Towers Building, Little Rock 72205	771-3350
P	Good, Henry H.	#1 St. Vincent Circle, Little Rock 72205	664-1060
GE	Gordon, O. T., Jr.	#1 St. Vincent Circle, Little Rock 72205	664-5932
A	Gordon, Vida H.	9501 North Rodney Parham Road, Little Rock 72207	227-8545
NMF	Gosnell, Charles R.	4301 West Markham, Little Rock 72201	661-5000
PD	Gosser, Bob L.	516 West Pershing, North Little Rock 72114	758-1530
IM	Goza, George M., Jr.	500 South University, Little Rock 72205	666-2881
GS	Graham, G. Grimsley	990 Medical Towers Building, Little Rock 72205	227-9080
RD	Gray, Edwin F.	11901 Fairway Drive, Little Rock 72212 (Res.)	224-0220
GE	Greenway, C. Don	409 North University, Little Rock 72205	664-6980
RD	Greutter, John E.	2112 North Beechwood Road, Little Rock 72207 (Res.)	663-1547
ORS	Grimes, H. Austin	Post Office Box 5270, Little Rock 72215	224-6900
GS	Growdon, James H.	500 South University, Little Rock 72205	664-4146
GYN	Haagler, James L.	500 South University, Little Rock 72205	664-5330
IM	Hall, A. D.	500 South University, Little Rock 72205	664-0027
U	Hall, A. David	500 South University, Little Rock 72205	664-4364
CD	Hall, Ronald R.	360 Doctors Park Building, Little Rock 72205	224-6525
PUD	Hampton, John R.	500 South University, Little Rock 72205	661-9393
OPH	Hankins, Edwin, III	500 South University, Little Rock 72205	666-0311
OPH	Hardberger, R. E.	#1 St. Vincent Circle, Little Rock 72205	661-0450
**PTH	Harden, V. Anthony	4301 West Markham, Little Rock 72201	661-5171
GE	Hardin, Ronald D.	960 Medical Towers Building, Little Rock 72205	224-9100
AN	Harar, C. Harold	1150 Medical Towers Building, Little Rock 72205	227-7590
IM	Harper, Ernest H.	400 West Pershing, North Little Rock 72114	227-8000
FP	Harper, Gary E.	123 Pearl, Little Rock 72205	375-3000
P	Harrendorf, Cagle	500 South University, Little Rock 72205	663-6346
R	Harris, D. R.	Post Office Box 7509, Little Rock 72217	664-8573
RHU	Harris, Michael N.	10001 Lile Drive, Little Rock 72205	227-8000
P	Harris, T. Stuart	12115 Hinson Road, Little Rock 72212	227-0680
NM	Harris, William T.	500 South University, Little Rock 72205	664-3914
P	Harrison, A. Vale	930 Medical Towers Building, Little Rock 72205	225-7433
FP	Harrison, Roy E.	8824 Chicot Road, Little Rock 72209	562-8600
OBG	Harrison, William E.	500 South University, Little Rock 72205	664-9232
P	Hawley, Harold B.	10800 Yosemite Valley Drive, Little Rock 72212 (Res.)	225-1247
GS	Hayden, William F.	500 South University, Little Rock 72205	664-2434
PS	Hayes, Harry, Jr.	#1 St. Vincent Circle, Little Rock 72205	666-2811
R	Haynes, W. Ducote	500 South University, Little Rock 72205	664-3914
LI	Headstream, James W	500 South University, Little Rock 72205	664-4365
P	Hearnberger, Henry G. Jr.	4313 West Markham, Little Rock 72201	664-4500
FP	Hedqes, Harold H.	424 North University, Little Rock 72205	664-4810
A	Hefley, Bill F.	Post Office Box 5675, Little Rock 72215	227-5210
FP	Hendren, Michael C.	330 Doctors Park Building, Little Rock 72205	227-6363
P	Henker, Fred O.	4301 West Markham, Little Rock 72201	661-5266
GYN	Henry, Charles R., Sr.	500 South University, Little Rock 72205	664-4191
N	Henry, G. Morrison	300 Medical Towers Building, Little Rock 72205	227-4750
OPH	Henry, J. Forrest, Jr.	516 Scott, Little Rock 72201	374-6338
OPH	Henry, Richard Y.	312 West Pershing, North Little Rock 72114	758-7627
PD	Henry, Robert L., Jr.	500 South University, Little Rock 72205	664-4044
IM	Herron, Jerry M.	890 Medical Towers Building, Little Rock 72205	224-0110
AN	Hickey, Joseph P.	1150 Medical Towers Building, Little Rock 72205	664-2496
U	Higginbotham, W. E., Jr.	500 South University, Little Rock 72205	664-0651
AN	Hill, Howell V.	1150 Medical Towers Building, Little Rock 72205	227-7590
#	Hodges, William B.	North Little Rock	
R	Holder, John C.	4301 West Markham, Little Rock 72201	661-5740
RD	Hollenberg, Henry G.	#7 Longfellow Circle, Little Rock 72207 (Res.)	663-7767
RD	Hollis, Nicholas T.	1817 North Monroe, Little Rock 72207 (Res.)	663-4160
FP	Holmes, Harlan C.	1160 Medical Towers Building, Little Rock 72205	225-6123
GS	Holt, L. Gordon	5326 West Markham, Little Rock 72205	666-9442
RHU	Holt, Stephen D.	10001 Lile Drive, Little Rock 72205	227-8000
R	Holton, Jerry C.	500 South University, Little Rock 72205	664-3914
P	Hooper, Anthony C.	Kirkwood, Missouri	
N	Howard, John G.	790 Medical Towers Building, Little Rock 72205	227-6370
OBG	Howell, Coburn S., Jr.	300 Medical Towers Building, Little Rock 72205	227-4750
OBG	Howell, Marsha T.	120 Doctors Park Building, Little Rock 72205	224-4738
ORS	Hundley, John M.	412 Cross, Little Rock 72201	375-5338



Type of Practice	Member's Name	Address	Telephone Number
ORS	Hutson, Harold G.	110 Doctors Park Building, Little Rock 72205	227-4150
IM	Jackson, J. Presley	10001 Lile Drive, Little Rock 72205	227-8000
FP	Jackson, M. A.	1304 Wright Avenue, Little Rock 72206	374-7940
D	Jansen, G. Thomas	500 South University, Little Rock 72205	664-4161
PTH	Jimenez, Jorge F.	804 Wolfe, Little Rock 72201	376-4621
CD	Johnson, Ben D.	500 South University, Little Rock 72205	661-0300
PTH	Johnson, B. Richard	9601 West 12th, Little Rock 72201	227-2888
OBG	Johnson, D. Richard	500 South University, Little Rock 72205	664-8003
IM	Johnson, Henry D.	500 South University, Little Rock 72205	664-4171
ORS	Johnson, Philip H.	Post Office Box 5270, Little Rock 72215	224-6900
OBG	Johnson, Spencer L.	500 South University, Little Rock 72205	661-1711
A	Johnston, Thomas G.	Post Office Drawer A, Little Rock 72205	664-3904
AN	Jones, Garry L.	500 South University, Little Rock 72205	661-4180
GS	Jones, John C.	500 South University, Little Rock 72205	664-4747
ORS	Jones, Kenneth G.	Post Office Box 5270, Little Rock 72215	224-6900
GS	Jones, Robert D.	500 South University, Little Rock 72205	664-4747
D	Jones, William N.	500 South University, Little Rock 72205	664-0418
NS	Jordan, F. Richard	4301 West Markham, Little Rock 72201	661-5676
NS	Jouett, W. Ray	750 Medical Towers Building, Little Rock 72205	225-0880
R	Joyce, John W.	1100 Medical Towers Building, Little Rock 72205	227-5240
RD	Junkin, Ruth H.	1012 Holden Avenue, Newport 72112 (Res.)	523-3238
AN	Kaemmerling, Raymond E.	500 South University, Little Rock 72205	664-8489
FP	Kagy, John K.	10121 North Rodney Parham, Little Rock 72207	224-2525
IM	Kahn, Alfred, Jr.	1300 West Sixth, Little Rock 72201	374-5588
PTH	Kalderon, Albert E.	4301 West Markham, Little Rock 72201	661-5171
D	Keeran, Michael G.	500 South University, Little Rock 72205	664-4161
OBG	Keller, Alfred W.	2000 Fendley Drive, North Little Rock 72114	758-3774
**PTH	Keller, Carole B.	4301 West Markham, Slot 517, Little Rock 72201	661-5171
FP	Kennedy, Charles H.	3115 JFK Boulevard, North Little Rock 72116	753-9464
PD	Kennedy, H. Frazier	500 South University, Little Rock 72205	664-4117
GS	King, G. Errol	1304-B Wright Avenue, Little Rock 72206	376-4020
PDA	Kittler, Fred J.	Post Office Box 5675, Little Rock 72215	227-5210
CD	Kizzier, J. C.	10001 Lile Drive, Little Rock 72205	227-8000
P	Koehler, Thomas R.	4313 West Markham, Little Rock 72201	664-4500
IM	Kohler, Peter O.	4301 West Markham, Little Rock 72201	661-5160
RD	Kolb, Agnes C.	30 Lenon Drive, Little Rock 72207 (Res.)	663-7930
P	Kolb, W. Payton	230 Medical Towers Building, Little Rock 72205	225-0887
RD	Kozberg, Oscar	28 Kingsbridge Way, Little Rock 72212 (Res.)	225-7709
GYN	Kreth, K. M.	417 North University, Little Rock 72205	663-9441
P	Krulin, Gregory S.	#1 St. Vincent Circle, Little Rock 72205	664-1060
CD	Kumpuris, Andrew G.	501 North University, Little Rock 72205	664-6841
GE	Kumpuris, Dennis D.	501 North University, Little Rock 72205	666-0249
GS	Kumpuris, Frank G.	415 North University, Little Rock 72205	664-1521
OBG	Kwee, James J.	310 Doctors Park Building, Little Rock 72205	224-5500
OTO	Kyser, James F.	900 Medical Towers Building, Little Rock 72205	227-8501
OPH	Landers, James H.	500 South University, Little Rock 72205	664-1104
R	Lane, John W.	1100 Medical Towers Building, Little Rock 72205	227-2180
GS	Lang, Nicholas P.	4301 West Markham, Little Rock 72201	661-6186
R	Langston, Harold D.	Post Office Box 5668, Little Rock 72215	664-8573
FP	Laurenzana, Donald A.	3423 Pike Avenue, North Little Rock 72118	753-3661
RD	Lawson, Mason G.	200 Ridgeway, Little Rock 72205 (Res.)	663-4834
A	Lee, J. Fred	Post Office Drawer A, Little Rock 72205	664-3904
PS	Lehmberg, Robert W.	919 University Tower Building, Little Rock 72204	664-8672
RHU	Leonard, Donald G.	#1 St. Vincent Circle, Little Rock 72205	664-2466
FP	Leonard, Garnett J.	3115 JFK Boulevard, North Little Rock 72116	753-9499
OBG	Leou, Frank J.	1070 Medical Towers Building, Little Rock 72205	224-1080
ORS	Lester, Joe K.	1518 Main, North Little Rock 72114	375-0102
PD	Levin, Frederick R.	500 South University, Little Rock 72205	664-4044
EM	Lewellen, John C.	8824 Chicot Road, Little Rock 72209	562-8600
CD	Lewis, W. Sexton	700 Medical Towers Building, Little Rock 72205	227-4434
R	Lile, Henry A.	1100 Medical Towers Building, Little Rock 72205	227-2180
TS	Lincoln, Ben M.	5326 West Markham, Little Rock 72205	664-6705
ORS	Lipke, Jay M.	401 North University, Little Rock 72205	666-0144
CDS	Loeb, Edward C.	200 Medical Towers Building, Little Rock 72205	224-5666
U	Logan, Charles W.	500 South University, Little Rock 72205	664-4364
ORS	Logue, Richard M.	401 North University, Little Rock 72205	666-0144
IM	Love, Tommy L., Jr.	#1 St. Vincent Circle, Little Rock 72205	664-5932
PD	Lowe, Betty A.	904 Wolfe, Little Rock 72201	376-4621, Ext. 101
N	Lucy, Dennis D., Jr.	4301 West Markham, Little Rock 72201	661-5135
GS	Ludwig, Frank R.	406 Pershing, North Little Rock 72114	758-1620
GS	Lyons, Virgil E., Jr.	500 South University, Little Rock 72205	664-2434
FP	Mallory, George L., Jr.	4511 Lynch Drive, North Little Rock 72117	945-9271
IM	Malott, Jerry D.	670 Medical Towers Building, Little Rock 72205	224-2424
PTH	Markland, Gary S.	9600 West 12th, Little Rock 72205	227-2888
PUD	Mason, William L.	500 South University, Little Rock 72205	661-9393
HEM	Massey, C. Garnett	1120 Medical Towers Building, Little Rock 72205	227-6770
A	Matthews, Joe W.	Post Office Box 5675, Little Rock 72215	227-5210
P	Matthews, Robert D.	4301 West Markham, Slot 568, Little Rock 72201	661-5900
CD	Meacham, Donald F.	450 Shackleford, Little Rock 72211	224-9001
AN	Means, Paul N.	1150 Medical Towers Building, Little Rock 72205	227-7590
IM	Metrailler, James A.	10121 North Rodney Parham, Little Rock 72207	224-2525
N	Miles, David A.	500 South University, Little Rock 72205	664-3018
ORS	Millard, Leighton	Post Office Box 5270, Little Rock 72215	224-6900
NEP	Miller, C. Lindsey	350 Medical Towers Building, Little Rock 72205	224-2141
FP	Miller, Forrest B., Jr.	3500 South University, Little Rock 72204	562-4838
FP	Miller, James L.	1308 East Kiehl, Sherwood 72116	835-0703
IM	Miller, Raymond P., Sr.	5918 Lee, Little Rock 72205	664-2500
OBG	Miller, Timothy T.	4301 West Markham, Little Rock 72201	661-5921
OTO	Milner, E. L.	500 South University, Little Rock 72205	664-4318
R	Mirza, Fayyaz H.	4301 West Markham, Little Rock 72201	661-5740
ADM	Mitchell, George K.	Post Office Box 2181, Little Rock 72203	378-2133
N	Money, Wandal D.	2003 Fendley Drive, North Little Rock 72114	753-5462
D	Moore, Burton A.	500 South University, Little Rock 72205	664-4161
U	Moore, J. Malcolm	500 South University, Little Rock 72205	664-4364
GS	Moore, Rex N.	Post Office Box 459, Jacksonville 72076	982-2141
IM	Moore, Robert B.	5918 Lee, Little Rock 72205	664-2500
OBG	Morgan, Frank E.	410 West Pershing, North Little Rock 72114	758-1022
GS	Morris, W. Dale	8500 West Markham, Little Rock 72205	224-1950
IM	Morris, Woodbridge E.	5326 West Markham, Little Rock 72205	664-2111
FP	Morrison, D. H.	3807 McCain Place, North Little Rock 72116	758-8981
R	Morrison, James R.	500 South University, Little Rock 72205	664-3914
ORS	Morrissey, Raymond T.	804 Wolfe, Little Rock 72202	376-4621
IM	Morse, Jim C.	500 South University, Little Rock 72205	661-9740
GE	Morton, William J.	10001 Lile Drive, Little Rock 72205	227-8000
ORS	Mulhollan, James S.	#1 St. Vincent Circle, Little Rock 72205	664-6334
GP	Murphy, James E.	1800 Maple, North Little Rock 72114	758-1640

Type of Practice	Member's Name	Address	Telephone Number
P	Murphy, Randolph	4601 West Markham, Little Rock 72205	371-1654
R	McAdoo, Hosea W., Jr.	1100 Medical Towers Building, Little Rock 72205	227-5240
O8G	McCaskill, Melvin R.	500 South University, Little Rock 72205	664-4131
PTH	McConnell, John D.	Post Office Box 5507, Little Rock 72215	664-2593
GS	McCracken, John D.	1000 Medical Towers Building, Little Rock 72205	227-8180
FP	McCrary, George A.	Post Office Box 805, Jacksonville 72076	982-4551
FP	McGowan, Robert J.	424 North University, Little Rock 72205	664-4810
OTO	McGrew, Robert N.	1200 Medical Towers Building, Little Rock 72205	227-5050
O8G	McKelvey, K. David	500 South University, Little Rock 72205	664-4131
ORS	McKenzie, Charles N.	802 North University, Little Rock 72205	666-0251
PTH	McKinney, Carl N.	Post Office Box 5507, Little Rock 72215	664-2593
O8G	McKnight, C. Allen	800 Medical Towers Building, Little Rock 72205	227-5885
IM	McMillan, James A.	670 Medical Towers Building, Little Rock 72205	224-2424
RD	McMillin, Lamar, Sr.	337 Crystal Court, Little Rock 72205 (Res.)	663-3783
GPM	McNair, James R.	Post Office Box 375, Little Rock 72203	664-5750
GP	Napper, George S.	513 Main, North Little Rock 72114	375-2433
	Nasca, Richard J.	Birmingham, Alabama	
R	Nelson, Alvah J., III	500 South University, Little Rock 72205	664-3914
ORS	Nelson, Carl L.	4301 West Markham, Little Rock 72201	661-5252
R	Newbern, David H.	500 South University, Little Rock 72205	664-3914
RD	Nisbett, James M.	517 East 7th, Little Rock 72202 (Res.)	375-2252
ORS	North, Edward R.	4301 West Markham, Little Rock 72201	661-5252
R	Norton, George A.	500 South University, Little Rock 72205	664-3914
R	Norton, Joseph A.	8570 Cantrell, Little Rock 72207 (Res.)	225-1860
PH	Oates, Gordon P.	1700 West 13th, Little Rock 72202	376-4511
R	Oddson, Terrence A.	500 South University, Little Rock 72205	664-3914
GF	Ogden, Mahlon D.	4601 Woodlawn, Little Rock 72205	664-0769
P	Oglesby, Walter R.	2500 McCain Boulevard, North Little Rock 72116	758-9992
ADM	O'Neal, Walter H.	9601 Interstate 630, Little Rock 72201	227-2672
GS	Osam, Patrick N.	320 Doctors Park Building, Little Rock 72205	227-7200
GS	Ozment, Kerry L.	1000 Medical Towers Building, Little Rock 72205	227-8180
PTH	Packmore, D. E.	#1 St. Vincent Circle, Little Rock 72205	661-8534
ADM	Padberg, Frank T.	55 East Erie, Chicago, Illinois 60611	312-664-4050
HEM	Padilla, Fernando	#1 St. Vincent Circle, Little Rock 72205	664-6601
AN	Panuska, Jerry	1150 Medical Towers Building, Little Rock 72205	227-7590
OT	Pappas, James J.	1200 Medical Towers Building, Little Rock 72205	227-5050
OPH	Parker, J. Mayne	500 South University, Little Rock 72205	666-9632
GS	Parnell, Clifton L.	8500 West Markham, Little Rock 72205	224-1950
FD	Paulus, Thomas E.	500 South University, Little Rock 72205	664-4044
ORS	Peeples, Earl	110 Doctors Park Building, Little Rock 72205	227-4150
P	Peters, John E.	4301 West Markham, Slot 589, Little Rock 72201	661-5800
END	Peters, Phillip J.	10001 Lile Drive, Little Rock 72205	227-8000
OPH	Petursson, Gissur J.	4301 West Markham, Little Rock 72201	661-5150
OPH	Phillips, Bert L.	1403 Main, North Little Rock 72114	376-2840
O8G	Phillips, Charles E.	800 Medical Towers Building, Little Rock 72205	227-5885
GS	Phipps, W. E., Jr.	Post Office Box 13, North Little Rock 72115	374-4821
GS	Pike, John D.	500 South University, Little Rock 72205	664-4321
IM	Pilcher, Michael T.	2500 McCain Boulevard, North Little Rock 72116	771-0300
OPHF	Poer, David V.	500 South University, Little Rock 72205	664-1104
AN	Pollard, Arlee E.	500 South University, Little Rock 72205	661-3578
RD	Pool, Chalmers S.	3925 North Lookout, Little Rock 72205 (Res.)	663-9352
PS	Pope, Norton A.	850 Medical Towers Building, Little Rock 72205	227-6464
OTO	Potts, Jerry L.	500 South University, Little Rock 72205	664-9082
GE	Power, Robert C.	409 North University, Little Rock 72205	664-6980
NM	Prather, Jerry L.	500 South University, Little Rock 72205	664-3914
CD	Price, Ben O.	500 South University, Little Rock 72205	664-9535
IM	Pringos, Andrew A.	Post Office Box 2900, Little Rock 72203	375-3231
RD	Proctor, Clark B.	63 Sherrill Heights, Little Rock 72202 (Res.)	663-5267
FP	Purdy, Harold D.	6924 Geyer Springs Road, Little Rock 72209	562-1463
IM	Pyle, Hoyte R., Jr.	5918 Lee, Little Rock 72205	664-2500
N	Ragsdill, Mary L.	2003 Fendley Drive, North Little Rock 72114	753-5462
D	Raque, Carl J.	500 South University, Little Rock 72205	664-4161
IM	Rasch, James R.	10001 Lile Drive, Little Rock 72205	227-8000
TS	Read, Raymond C.	300 East Roosevelt Road, Little Rock 72206	372-8361, Ext. 331
RD	Reaves, B. James	4 Edgehill Road, Little Rock 72207 (Res.)	663-1570
PUD	Rector, Nancy F.	890 Medical Towers Building, Little Rock 72205	224-0110
NS	Reding, David L.	750 Medical Towers Building, Little Rock 72205	225-0880
U	Redman, John F.	4301 West Markham, Slot 540, Little Rock 72201	661-5240
O8G	Reed, Ewing C., Jr.	300 Doctors Park Building, Little Rock 72205	227-6377
IM	Reeder, Kathryn L.	300 East Roosevelt Road, Little Rock 72206	372-8361
P	Reese, William G.	4301 West Markham, Little Rock 72201	661-5266
R	Regnier, George G.	500 South University, Little Rock 72205	664-3914
R	Rhinehart, William J.	500 South University, Little Rock 72205	664-3914
CD	Richards, Mary K.	#1 St. Vincent Circle, Little Rock 72205	664-9040
GS	Richardson, Robert E.	500 South University, Little Rock 72205	664-4321
FP	Riddle, John F., Jr.	8824 Chicot Road, Little Rock 72209	562-8600
FP	Riegler, Nicholas W., Jr.	1024 Scott, Little Rock 72202	375-3326
FP	Riley, William H.	3500 South University, Little Rock 72204	562-4838
CHP	Ringdahl, Irving C.	4301 West Markham, Little Rock 72201	661-5810
OPH	Roberson, Michael C.	623 Woodlane, Little Rock 72201	374-6491
O8G	Rodgers, C. Dudley	500 South University, Little Rock 72205	664-4131
FP	Rodgers, Charles H.	3500 South University, Little Rock 72204	562-4838
RD	Rodgers, Clyde D.	5223 Hawthorne Road, Little Rock 72207 (Res.)	663-7502
PTH	Roe, Rodney A.	500 South University, Little Rock 72205	664-2593
GYN	Roman, Juan J.	#1 St. Vincent Circle, Little Rock 72205	661-0596
ORS	Rooney, Thomas P.	501 West 25th, North Little Rock 72114	758-2046
RD	Rosenbaum, Carl A.	107 Cambridge Place, Little Rock 72207 (Res.)	225-8071
ORS	Ross, Ashley S.	500 South University, Little Rock 72205	664-8515
GYN	Ross, Robert W.	417 North University, Little Rock 72205	664-8200
IM	Ross, S. William	#1 St. Vincent Circle, Little Rock 72205	664-6600
PTH	Roth, Sanford I.	4301 West Markham, Little Rock 72201	661-6400
RD	Rother, Frances C.	2nd and Grand, Hot Springs 71901 (Res.)	623-1571
OTO	Rounsaville, Harry L.	500 South University, Little Rock 72205	664-9082
OPH	Roy, F. Hampton	970 Medical Towers Building, Little Rock 72205	227-6980
OTO	Ruggles, Dwayne L.	520 West 26th, North Little Rock 72114	758-6560
ORS	Runyan, W. A.	110 Doctors Park Building, Little Rock 72205	227-4150
FP	Salitzman, Ben N.	4301 West Markham, Slot 592, Little Rock 72201	661-5371
TS	Satterfield, John V.	500 South University, Little Rock 72205	664-6050
FP	Schratz, Bruce E.	1801 Maple, North Little Rock 72114	758-1002
OPH	Schroeder, George T.	260 Doctors Park Building, Little Rock 72205	224-4484
IM	Schultz, John C.	10001 Lile Drive, Little Rock 72205	227-8000
GS	Schwander, Howard	320 Doctors Park Building, Little Rock 72205	227-7200
OPH	Schwarz, W. J.	405 North University, Little Rock 72205	664-5354
PTH	Scott, Don I.	#1 St. Vincent Circle, Little Rock 72205	661-8539
OPH	Scruggs, Jan W.	312 West Pershing, North Little Rock 72114	758-7627
R	Seibert, Joanna	804 Wolfe, Little Rock 72202	376-4621
ORS	Selakovich, Walter G.	500 South University, Little Rock 72205	666-2824
O8G	Selby, Micheal L.	500 South University, Little Rock 72205	664-8003



Type of Practice	Member's Name	Address	Telephone Number
P.	Shannon, Robert F.	4301 West Markham, Little Rock 72201	661-5266
OPH	Shock, John P., Jr.	4301 West Markham, Little Rock 72201	661-5150
ORS	Shuffield, H. Elvin	110 Doctors Park Building, Little Rock 72205	227-4150
IM	Silvoso, Gerald R.	10001 Lile Drive, Little Rock 72205	227-8000
O8G	Simmons, Orman W.	310 Doctors Park Building, Little Rock 72205	224-5500
IM	Simpson, N. Henry	441 Donaghey Building, Little Rock 72201	375-2801
P	Sims, James M.	2500 McCain, North Little Rock 72116	758-9992
PD	Sims, Neil H.	4301 West Markham, Little Rock 72201	661-5320
PTH	Singleton, L. Gene	9601 Interstate 630, Little Rock 72201	227-2888
GS	Sipes, Frank M.	403 Donaghey Building, Little Rock 72201	375-5543
ORS	Slater, John G., Jr.	1100 North University, Little Rock 72207	664-7710
PTH	Slaven, John E.	9600 West 12th, Little Rock 72201	227-2888
R	Slayden, John E.	1100 Medical Towers Building, Little Rock 72205	227-5240
AN	Sloan, Fay M.	1150 Medical Towers Building, Little Rock 72205	227-7590
GYN	Sloan, James M.	500 South University, Little Rock 72205	664-2277
GE	Smart, Douglas F.	409 North University, Little Rock 72205	664-6980
P	Smith, Aubrey C.	#1 St. Vincent Circle, Little Rock 72205	664-0001
CD	Smith, David E.	360 Doctors Park Building, Little Rock 72205	224-6525
O8G	Smith, Douglas B.	310 Doctors Park Building, Little Rock 72205	224-5500
OPH	Smith, James L.	623 Woodlane, Little Rock 72201	374-6491
OPH	Smith, Joe E.	7107 West 12th, Little Rock 72204	666-8627
FP	Smith, John McCollough	4000 Woodlawn, Little Rock 72205	666-6570
GYN	Smith, Mose, III	5326 West Markham, Little Rock 72205	664-1527
R	Smith, Phillip L.	4301 West Markham, Little Rock 72201	661-5740
A	Smith, Furcell, Jr.	Post Office Box 5675, Little Rock 72215	227-5210
GE	Smith, Thomas J.	409 North University, Little Rock 72205	664-6980
PD	Smith, Thomas W.	500 South University, Little Rock 72205	664-4117
OTO	Smith, Tom	330 Medical Towers Building, Little Rock 72205	227-4863
RD	Snodgrass, William A., Jr.	3850 B. Rue Maison, Mobile, Alabama 36608	205-342-4845
FP	Somers, A. Jack	330 Doctors Park Building, Little Rock 72205	227-6363
ORS	Sorrells, R. Barry	Post Office Box 5270, Little Rock 72215	224-6900
RD	Spitzberg, Irving J.	307 North Cedar, Little Rock 72205 (Res.)	663-6877
FUD	Squire, Arthur E.	10001 Lile Drive, Little Rock 72205	227-8000
GS	Stainton, Robert M.	300 East Roosevelt Road, Little Rock 72206	372-8361
U	Stallings, Walt	500 South University, Little Rock 72205	664-0651
IM	Stanley, Joe P.	Pike Plaza Center, North Little Rock 72114	758-9823
ORS	Steele, William L.	1100 North University, Little Rock 72207	664-7710
IM	Steinkamp, Ruth C.	409 Fairfax, Little Rock 72205 (Res.)	663-5287
ONC	Sternberg, Jack J.	500 South University, Little Rock 72205	661-0060
#	Stewart, Bill D.	Little Rock	
FP	Stotts, John R.	Post Office Box 7219, Little Rock 72217	663-9415
CD	Stout, Kimber M.	2000 Fendley Drive, North Little Rock 72114	758-5133
FP	Strauss, Alvin W., Jr.	1026 Donaghey Building, Little Rock 72201	372-1828
IM	Strauss, Mark A.	1026 Donaghey Building, Little Rock 72201	372-1828
PD	Stroope, George F.	516 West Pershing, North Little Rock 72114	758-1530
O8G	Struble, R. Harlan	270 Medical Towers Building, Little Rock 72205	224-6300
PS	Stuckey, James G.	500 South University, Little Rock 72205	664-4383
O8G	Studdard, James D.	310 Doctors Park Building, Little Rock 72205	224-5500
U	Sulieaman, J. Samir	518 West 26th, North Little Rock 72114	758-6111
PTH	Sullivan, Charles D.	9600 West 12th, Little Rock 72205	227-2888
P	Sundermann, Richard H.	Veterans Administration Hospital, North Little Rock 72114	372-8361
RD	Swindoll, Bryant S.	3415 North Hills Boulevard, North Little Rock 72116 (Res.)	753-3029
IM	Taylor, Eugene H.	10001 Lile Drive, Little Rock 72205	227-8000
CRS	Tedford, John G.	500 South University, Little Rock 72205	664-8466
PD	Teeter, John A.	500 South University, Little Rock 72205	664-4117
GE	Texter, E. Clinton, Jr.	4301 West Markham, Slot 567, Little Rock 72201	661-5177
OPH	Thomas, A. Henry	500 South University, Little Rock 72205	664-8445
P	Thomas, James L.	4313 West Markham, Little Rock 72201	664-4500
ORS	Thomas, Jerry L.	#1 St. Vincent Circle, Little Rock 72205	661-0350
GS	Thomas, Peter O.	1310 Cantrell Road, Little Rock 72201	374-5703
CD	Thompson, A. J.	#1 St. Vincent Circle, Little Rock 72205	664-5860
OTO	Thompson, Albert R.	500 South University, Little Rock 72205	664-4381
GS	Thompson, Bernard W.	300 East Roosevelt Road, Little Rock 72206	372-8361
AN	Thompson, Dola S.	4301 West Markham, Slot 515, Little Rock 72201	661-6115
P	Thompson, Robert M.	819 University Tower Building, Little Rock 72204	664-2444
ORS	Thompson, S. Berry	1100 North University, Little Rock 72207	664-7710
ORS	Thompson, Samuel B.	1100 North University, Little Rock 72207	664-7710
ADM	Thorn, G. Max	St. Vincent Infirmary, Little Rock 72201	661-3154
CD	Ticaric, Stephen T.	#1 St. Vincent Circle, Little Rock 72205	664-9040
FP	Tilley, Steve B.	Post Office Box 7219, Little Rock 72217	663-9415
R	Tirman, Robert M.	4301 West Markham, Slot 556, Little Rock 72201	661-5740
IM	Tolbert, Louis E., Jr.	500 South University, Little Rock 72205	666-0136
ADM	Towbin, Eugene J.	300 East Roosevelt Road, Little Rock 72206	372-8361, Ext. 1291
FP	Tracy, Phillip A.	Post Office Box 459, Jacksonville 72076	982-2141
HEM	Tranum, Bill L.	500 South University, Little Rock 72205	664-3008
CDS	Trumbull, Horace R.	4301 West Markham, Little Rock 72201	661-6175
GP	Trussell, Thomas W.	5326 West Markham, Little Rock 72205	663-4114
AN	Tseng, Jyi-Ming	1150 Medical Towers Building, Little Rock 72205	227-7590
GS	Tucker, W. Everett	990 Medical Towers Building, Little Rock 72205	227-9080
AN	Valentine, Robert G.	2800 Percy Machin Drive, North Little Rock 72114	758-4806
AN	Vaughter, W. Roger	3 Ken Circle, Little Rock 72207 (Res.)	664-3789
PS	Vogel, Robert G.	919 University Tower Building, Little Rock 72204	664-8672
GP	Wade, William I.	424 North University, Little Rock 72205	664-4810
IM	Wagoner, Jack	5918 Lee, Little Rock 72205	664-2500
RD	Wallis, Charles	5909 Country Club, Little Rock 72207 (Res.)	663-2132
GS	Walt, James R.	500 South University, Little Rock 72205	664-4146
IM	Ward, Harry P.	4301 West Markham, Little Rock 72201	661-5680
AN	Ward, Joseph P.	1150 Medical Towers Building, Little Rock 72205	227-7590
PD	Warford, Lloyd R.	500 South University, Little Rock 72205	664-4044
RD	Warford, Walton R.	3737 Lakeshore Drive, North Little Rock 72116 (Res.)	753-4193
OPH	Watkins, John G., Jr.	230 Doctors Park Building, Little Rock 72205	227-6797
OPH	Watkins, John G., III	230 Doctors Park Building, Little Rock 72205	227-6797
IM	Watkins, Larry S.	500 South University, Little Rock 72205	661-9740
RD	Watson, Robert	30 Edgehill, Little Rock 72207 (Res.)	663-6680
ORS	Weber, Edward R.	4301 West Markham, Little Rock 72201	661-5251
GP	Weber, James R.	Post Office Box 188, Jacksonville 72076	982-2108
ORS	Weber, Michael J.	4301 West Markham, Slot 531, Little Rock 72201	661-5251
CDS	Weiss, John B.	780 Medical Towers Building, Little Rock 72205	224-1508
NEP	Wellons, James A., Jr.	350 Medical Towers Building, Little Rock 72205	224-2141
IM	Wells, Travis L.	216 Donaghey Building, Little Rock 72201	375-7121
PS	Wende, Raymond A.	919 University Tower Building, Little Rock 72204	664-8672
GS	Wenger, Carl E.	330 Doctors Park Building, Little Rock 72205	227-6363
GS	Westbrook, Kent C.	4301 West Markham, Little Rock 72201	661-6176
P	Westerfield, Frank M., Jr.	230 Medical Towers Building, Little Rock 72205	225-0777
PTH	Wetzel, William J.	4301 West Markham, Little Rock 72201	661-5171
FP	White, Oba B.	908 High, Little Rock 72202	374-3609
RD	Wilbur, E. Lloyd	3 Wingate Drive, Little Rock 72205 (Res.)	225-1252
GP	Wilkes, Elbert H.	5322 West Markham, Little Rock 72205	663-4114

Type of Practice	Member's Name	Address	Telephone Number
CDS	Williams, C. David	200 Medical Towers Building, Little Rock 72205	224-5666
CDS	Williams, G. Doyne	4301 West Markham, Slot 628, Little Rock 72201	661-6175
NS	Williams, Ronald N.	750 Medical Towers Building, Little Rock 72205	225-0880
FP	Wilson, J. D.	705 North Ash, Little Rock 72205	663-5413
CD	Wilson, James W.	#1 St. Vincent Circle, Little Rock 72205	664-9040
ORS	Wilson, John L.	601 North University, Little Rock 72205	666-0144
OPH	Wilson, R. Sloan	500 South University, Little Rock 72205	664-1104
IM	Wilson, T. Ben	2500 McCain Place, North Little Rock 72116	771-0300
IM	Winn, Charles R., Jr.	240 Doctors Park Building, Little Rock 72205	227-6659
GYN	Wood, Gary P.	500 South University, Little Rock 72205	664-6127
FP	Wortham, Thomas H.	Post Office Box 459, Jacksonville 72076	982-2141
OBG	Wynn, Ralph M.	4301 West Markham, Little Rock 72201	661-5387
PTH	Young, Douglas E.	9600 West 12th, Little Rock 72201	227-2888
U	Young, Jerry M.	410 West 26th, North Little Rock 72114	758-1310
PH	Young, Robert W.	4815 West Markham, Little Rock 72201	661-2112
RD	Zell, Lawrence M.	Star Route, Box 201-A, Tucker 72168 (Res.)	842-2216

#### RANDOLPH COUNTY

FP	Baltz, Albert L.	110 West Broadway, Pocahontas 72455	892-4467
GP	Baltz, M. A.	110 West Broadway, Pocahontas 72455	892-3111
FP	Barre, Hal S.	Post Office Box 585, Pocahontas 72455	892-3371
GP	DeClerk, Thomas B.	204 Thomasville, Pocahontas 72455	892-3344
FP	Holt, Danny B.	110 West Broadway, Pocahontas 72455	892-4467
FP	Jansen, Andrew J.	110 West Broadway, Pocahontas 72455	892-4467
FP	Lombardo, Richard J.	Route 4, Highway 90, Pocahontas 72455	892-4464
FP	Scott, William W.	Post Office Box 466, Pocahontas 72455	892-8086
GP	Smith, Norman K.	107 Van Bibber, Pocahontas 72455	892-3389

#### SALINE COUNTY

GP	Ashby, John W.	302 West South, Benton 72015	778-4511
R	Ashby, Robert M.	815 North East, Benton 72015	778-6555
GS	Baber, Quin M.	105 McNeil, Benton 72015	778-7435
OM	Bethel, James C.	300 East Roosevelt Road, Little Rock 72206	372-8361, Ext. 300
RD	Bryan, Harry D.	901 Misty Drive, Benton 72015 (Res.)	776-1231
OBG	Caldwell, David L.	910 North East, Benton 72015	778-0426
ORS	Cash, Ralph D.	105 McNeil, Benton 72015	778-1388
GP	Coker, S. Dale	Benton Services Center, Building 6, Benton 72158	371-1906
PM	Cornwell, Sam L.	Route 3, Box 225, Benton 72015	778-1111, Ext. 488
OBG	Council, Robert A., Jr.	910 North East, Benton 72015	778-0426
ORS	Duncan, J. Shelby	105 McNeil, Benton 72015	778-1388
EM	Edmiston, Frank G.	18101 Fawn Tree Drive, Little Rock 72209 (Res.)	455-1315
OM	Frandolig, John E.	Post Office Box 97, Bauxite 72011	557-5421
OPH	Gardner, Dan	Post Office Box 340, Benton 72015	778-8842
GP	Hogue, F. Paul	Post Office Box 307, Benton 72015	778-4511
FP	Hood, C. Ted	205 Carpenter, Benton 72015	778-8264
FP	Izard, Ralph S.	Post Office Box AA, Bryant 72022	847-0289
FP	Jones, Curtis W., Sr.	225 South Market, Benton 72015	778-2722
FP	Kirk, Marvin N., Jr.	205 West Carpenter, Benton 72015	778-8264
GP	Martindale, J. L.	302 West South, Benton 72015	778-4511
P	Mizell, Walter S.	Benton Services Center, Benton 72158	778-1111
PD	McClard, Helen P.	Post Office Box 908, Benton 72015	778-0421
	McNichol, Ronald W.	San Antonio, Texas	
AN	Porter, Jim C.	Post Office Box D, Benton 72015	776-0052
OM	Ramsay, Rex C., Jr.	Post Office Box 300, Bauxite 72011	778-3644
FP	Stewart, David L.	205 West Carpenter, Benton 72015	778-8264
FP	Taggart, S. D.	205 West Carpenter, Benton 72015	847-2719
OBG	Thibault, Frank G., Jr.	910 North East, Benton 72015	778-0426
IM	Thomas, Bill R.	111 McNeil, Benton 72015	778-5740
#	Thompson, John P.	Benton	
RD	Thorn, H. B., Jr.	Route 6, Box 1200, Benton 72015 (Res.)	778-4858
GS	Viner, Donald L.	105 McNeil, Benton 72015	778-7435
FP	Wright, John D.	321 Short, Benton 72015	776-0603

#### SCOTT COUNTY

GP	Wright, Harold B.	Post Office Box 249, Waldron 72958	637-3111
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#### SEBASTIAN COUNTY

PD	Aclin, Richard R.	500 South 16th, Fort Smith 72901	783-1085
RD	Adams, William F.	1100 Murta Road, Van Buren 72956 (Res.)	474-8668
R	Albers, David G.	Post Office Box 1827, Fort Smith 72902	782-5035
ORS	Alberty, Joe Paul	300 North Greenwood, Fort Smith 72901	783-5970
EM	Alexander, R. Kent	1311 South "I", Fort Smith 72901	441-4381
GS	Anderson, Paul M.	1501 South Waldron, Fort Smith 72903	452-9316
OBG	Atkins, Jimmie G.	1500 Dodson, Fort Smith 72901	782-2071
GP	Bailey, Charles W.	Post Office Box 426, Greenwood 72936	996-4111
P	Baker, Max A.	2112 South Greenwood, Fort Smith 72901	785-2361
IM	Barker, Robert C., Jr.	1500 Dodson, Fort Smith 72901	782-2071
HEM	Barnes, L. Ford	Post Office Box 3528, Fort Smith 72913	452-2077
GE	Bordeaux, Ronald A.	Post Office Box 3528, Fort Smith 72913	452-2077
D	Bradford, A. C.	Post Office Box 3528, Fort Smith 72913	452-2077
R	Broadwater, John R.	1500 Dodson, Fort Smith 72901	782-2071
ORS	Brown, Byron L.	100 North 16th, Fort Smith 72901	783-3604
RD	Brown, James A.	6810 South "I", Fort Smith 72903 (Res.)	452-1231
GS	Brown, Richard S.	Post Office Box 3528, Fort Smith 72913	452-2077
ORS	Buie, James H.	1500 Dodson, Fort Smith 72901	782-2071
FP	Busby, J. David	100 South 14th, Fort Smith 72901	785-2431
PD	Cabell, Ben B.	312 South 16th, Fort Smith 72901	782-7921
R	Cassady, Calvin R.	Post Office Box 1827, Fort Smith 72902	782-5035
P	Chambers, A. Pat	1500 Dodson, Fort Smith 72901	782-2071
P	Chambers, Donald S.	1500 Dodson, Fort Smith 72901	782-2071
AN	Chamblin, Don W.	1500 Dodson, Fort Smith 72901	782-2071
AN	Chester, Robert L.	1500 Dodson, Fort Smith 72901	782-2071
TS	Clemmons, Edward E.	522 South 16th, Fort Smith 72901	785-1413
AN	Coffman, Edwin L.	1500 Dodson, Fort Smith 72901	782-2071
NEP	Coleman, Michael D.	1500 Dodson, Fort Smith 72901	782-2071
CRS	Crigler, Ralph E.	1500 Dodson, Fort Smith 72901	782-2071
R	Crow, Neil E., Sr.	1500 Dodson, Fort Smith 72901	782-2071
R	Culp, William C.	1501 South Waldron, Fort Smith 72903	452-9416
RD	Cunningham, Charles S.	Poteau, Oklahoma	
PTH	Davenport, Leo	922 Lexington, Fort Smith 72901	785-1447
CD	Deaton, John M.	1500 Dodson, Fort Smith 72901	782-2071
P	Desrochers, Paul E.	2112 South Greenwood, Fort Smith 72901	785-2361
P	Dorab, Joe H.	1500 Dodson, Fort Smith 72901	782-2071
FP	Dudding, William F.	3120 Jenny Lind, Fort Smith 72901	782-4986
NS	Dulligan, Michael P.	1500 Dodson, Fort Smith 72901	782-2071
IM	Edmondson, Steve	1500 Dodson, Fort Smith 72901	782-2071
OBG	Ellis, Homer G.	Post Office Box 3507, Fort Smith 72913	785-2411



Type of Practice	Member's Name	Address	Telephone Number
R	Erickson, Clark A.	1500 Dodson, Fort Smith 72901	782-2071
OPH	Faier, Samuel Z.	1500 Dodson, Fort Smith 72901	782-2071
ONC	Fecher, Dennis R.	1500 Dodson, Fort Smith 72901	782-2071
U	Feder, Frederick P.	520 Lexington, Fort Smith 72901	782-7261
FP	Feild, T. A., III	3600 North "O", Fort Smith 72904	783-5158
OPH	Felker, Gary V.	3000 Rogers, Fort Smith 72901	782-8892
AN	Fisher, Robert D.	1500 Dodson, Fort Smith 72901	782-2071
PD	Floyd, Charles H.	617 South 16th, Fort Smith 72901	783-3166
U	Francis, Darryl R., II	520 Lexington, Fort Smith 72901	782-7261
OTO	Gedosh, Edgar A.	600 South 16th, Fort Smith 72901	782-6022
R	Gill, James A.	1500 Dodson, Fort Smith 72901	782-2071
CD	Gilliland, J. Campbell	1500 Dodson, Fort Smith 72901	782-2071
PTH	Girkin, R. Gene	922 Lexington, Fort Smith 72901	785-1447
O8G	Glover, D. Bruce	Post Office Box 3507, Fort Smith 72913	785-2411
=	Goldstein, Davis W.	Fort Smith	
PS	Goodman, R. Cole	1500 Dodson, Fort Smith 72901	782-2071
AN	Goodman, Raymond C., Sr.	1500 Dodson, Fort Smith 72901	782-2071
EM	Graves, Stephen C.	7301 Rogers, Fort Smith 72903	452-5100
N	Griggs, William L., III	1500 Dodson, Fort Smith 72901	782-2071
U	Hamblin, David W.	3104 Executive Park Drive, Fort Smith 72903	452-8400
ORS	Hathcock, Alfred B.	1500 Dodson, Fort Smith 72901	782-2071
GS	Hawkins, S. Wright	Post Office Box 3528, Fort Smith 72913	452-2077
AN	Herren, Adrian L.	216-A North Greenwood, Fort Smith 72901	783-1497
U	Hewett, Archie L.	600 South 14th, Fort Smith 72901	785-2604
IM	Hinkle, Richard A., Jr.	1501 South Waldron, Fort Smith 72903	452-8753
O8G	Hoffman, John D.	Post Office Box 3528, Fort Smith 72913	452-2077
GS	Hoge, Marlin B.	1501 South Waldron, Fort Smith 72903	452-9316
O8G	Holman, James F.	Post Office Box 3528, Fort Smith 72913	452-2077
IM	Holman, William A.	Post Office Box 3528, Fort Smith 72913	452-2077
GS	Holmes, W. C., Jr.	Post Office Box 3528, Fort Smith 72913	452-2077
IM	Hornberger, E. Z., Jr.	1311 South "I", Fort Smith 72901	441-5440
A	Howell, James T.	1420 South "I", Fort Smith 72901	782-2983
OPH	Hughes, Robert P., Jr.	3000 Rogers, Fort Smith 72901	782-8892
R	Huskison, William T.	1501 South Waldron, Fort Smith 72903	452-9416
GYN	Hyde, Marshall L.	Post Office Box 3507, Fort Smith 72913	785-2411
FP	Ingram, Ralph N.	1120 Lexington, Fort Smith 72901	785-2655
ORS	Irwin, Peter J.	1500 Dodson, Fort Smith 72901	782-2071
GS	Janes, Robert H.	1500 Dodson, Fort Smith 72901	782-2071
EM	Jones, W. Duane	1311 South "I", Fort Smith 72901	441-5011
**FP	Justus, Michael G.	100 South 14th, Fort Smith 72901	785-2431
GYN	Kelsey, J. F.	Post Office Box 3507, Fort Smith 72913	785-2411
RD	Kennedy, Virgil N.	5417 Grand Avenue, Fort Smith 72904 (Res.)	452-3351
IM	Kientz, John L. B., Jr.	1500 Dodson, Fort Smith 72901	782-2071
CD	Klopfenstein, Keith	1500 Dodson, Fort Smith 72901	782-2071
ORS	Knight, William E.	1500 Dodson, Fort Smith 72901	782-2071
END	Kocher, David B.	Post Office Box 3528, Fort Smith 72913	452-2077
PTH	Koenig, Albert S., Jr.	922 Lexington, Fort Smith 72901	785-1447
PTH	Koenig, A. Samuel, III	922 Lexington, Fort Smith 72901	785-1447
O8G	Kradel, R. Paul	Post Office Box 3528, Fort Smith 72913	452-2077
FP	Kramer, Ralph G.	603 Lexington, Fort Smith 72901	783-8917
RD	Krock, Fred H.	4008 South "S", Fort Smith 72903 (Res.)	783-4832
FP	Kutait, Kemal E.	1120 Lexington, Fort Smith 72901	785-2655
IM	Lambiotte, Louis O.	1500 Dodson, Fort Smith 72901	782-2071
PTH	Landrum, Annette V.	Post Office Box 1684, Fort Smith 72902	782-4983
GS	Landrum, Samuel E.	522 South 16th, Fort Smith 72901	785-4181
OTO	Lane, Charles S., Jr.	600 South 16th, Fort Smith 72901	782-6022
AN	Lenington, Jerry O.	1500 Dodson, Fort Smith 72901	782-2071
IM	Lewing, Hugh S.	404 South 16th, Fort Smith 72901	783-3159
D	Lewis, John E.	1500 Dodson, Fort Smith 72901	782-2071
FP	Lilly, Ken	1120 Lexington, Fort Smith 72901	785-2655
NS	Lockhart, William G.	1500 Dodson, Fort Smith 72901	782-2071
GS	Lockwood, Frank M.	1500 Dodson, Fort Smith 72901	782-2071
ORS	Long, James W.	1500 Dodson, Fort Smith 72901	782-2071
NS	MacDade, Albert D.	1500 Dodson, Fort Smith 72901	782-2071
D	Magness, Jack L., Jr.	Post Office Box 3528, Fort Smith 72913	452-2077
IM	Martin, Art B.	1500 Dodson, Fort Smith 72901	782-2071
FP	Martin, M. C. (Rick)	Post Office Box 426, Greenwood 72936	976-4111
O8G	Mason, Joe N.	1500 Dodson, Fort Smith 72901	782-2071
GE	Masri, Hassan M.	1500 Dodson, Fort Smith 72901	782-2071
GP	Meador, Don M.	3600 North "O", Fort Smith 72904	783-5158
=	Mendelsohn, E. A.	Fort Smith	
R	Miller, Robert C.	1500 Dodson, Fort Smith 72901	782-2071
GS	Mings, Harold H.	1500 Dodson, Fort Smith 72901	782-2071
OPH	Moulton, Everett C., Jr.	3000 Rogers, Fort Smith 72901	782-8892
OPH	Moulton, Everett C., III	3000 Rogers, Fort Smith 72901	782-8892
ORS	Mumme, Marvin E.	1500 Dodson, Fort Smith 72901	782-2071
RD	Murchison, Roary A.	19 Haven Drive, Fort Smith 72901 (Res.)	782-5323
PD	McClain, Merle E.	312 South 16th, Fort Smith 72901	782-7921
FP	McDonald, H. P.	2044 North 29th, Fort Smith 72904	782-4833
OPH	McEwen, Stanley R.	3000 Rogers, Fort Smith 72901	782-8892
FP	McKinney, Robert	Post Office Box 426, Greenwood 72936	976-4111
IM	McMinimy, D. J.	1500 Dodson, Fort Smith 72901	782-2071
IM	Nichols, David R.	1500 Dodson, Fort Smith 72901	782-2071
D	Niemann, Jeffrey M.	316 Lexington, Fort Smith 72901	783-1121
GS	Olson, John D.	1500 Dodson, Fort Smith 72901	782-2071
GE	Paris, Charles H.	Post Office Box 3528, Fort Smith 72913	452-2077
PD	Parker, Joel E., Jr.	617 South 16th, Fort Smith 72901	783-3165
IM	Parker, Stephen M.	3600 North "O", Fort Smith 72904	783-5158
R	Parker, Thomas G.	1501 South Waldron, Fort Smith 72903	452-9416
TS	Patrick, Donald L.	1500 Dodson, Fort Smith 72901	782-2071
IM	Pence, Eldon D., Jr.	1501 South Waldron, Fort Smith 72903	452-8753
**FP	Perrymore, W. Dale	100 South 14th, Fort Smith 72901	785-2431
GYN	Phillips, W. P.	Post Office Box 3507, Fort Smith 72913	785-2411
FP	Pillstrom, Lawrence G.	1120 Lexington, Fort Smith 72901	785-2655
IM	Poe, McDonald, Jr.	1501 South Waldron, Fort Smith 72903	452-8753
O8G	Poole, M. Louis	1501 South Waldron, Fort Smith 72903	452-8158
CD	Pope, John R.	1500 Dodson, Fort Smith 72901	782-2071
PD	Post, James M., Jr.	617 South 16th, Fort Smith 72901	783-3165
IM	Pradel, Paul A.	1501 South Waldron, Fort Smith 72903	452-8753
CD	Prewitt, Taylor A.	Post Office Box 3528, Fort Smith 72913	452-2077
IM	Price, Lawrence C.	404 South 16th, Fort Smith 72901	783-3158
OTO	Raymond, Thomas H.	600 South 16th, Fort Smith 72901	782-6022
N	Reul, Charles G.	1500 Dodson, Fort Smith 72901	782-2071
EM	Reyenga, Stanley L.	1311 South "I", Fort Smith 72901	441-5011
R	Rogers, Paul L.	1501 South Waldron, Fort Smith 72903	452-9416
FP	Ross, R. Wendell	1120 Lexington, Fort Smith 72901	785-2655
R	Russell, Rex D.	1500 Dodson, Fort Smith 72901	782-2071
AN	Safraneck, Edward J.	216-A North Greenwood, Fort Smith 72901	783-1497

Type of Practice	Member's Name	Address	Telephone Number
GS	Saviers, Boyd M.	1500 Dodson, Fort Smith 72901	782-2071
AN	Schemel, William H.	216-A North Greenwood, Fort Smith 72901	783-1497
#	Schirmer, Roy E.	Fort Smith	
IM	Schwarz, Paul R.	404 South 16th, Fort Smith 72901	783-3158
N	Serrano, Ernest	1500 Dodson, Fort Smith 72901	782-2071
GYN	Sherman, Robert L.	Post Office Box 3507, Fort Smith 72913	785-2411
GP	Shermer, J. P.	623 South 21st, Fort Smith 72901	783-1520
ORS	Sherrill, William M., Jr.	1500 Dodson, Fort Smith 72901	782-2071
PTH	Sigler, John K.	922 Lexington, Fort Smith 72901	785-1447
ORS	Skagerberg, David G.	1500 Dodson, Fort Smith 72901	782-2071
PTH	Smith, Kent	922 Lexington, Fort Smith 72901	785-1447
R	Snider, James R.	1500 Dodson, Fort Smith 72901	782-2071
IM	Staggs, J. David	1500 Dodson, Fort Smith 72901	782-2071
ORS	Stanton, William B.	300 North Greenwood, Fort Smith 72901	783-0225
PUD	Stewart, Jerry R.	Post Office Box 3528, Fort Smith 72913	452-2077
GP	Stewart, John B.	603 Lexington, Fort Smith 72901	783-8917
PS	Still, Eugene F., II	1500 Dodson, Fort Smith 72901	782-2071
FP	Svena, Richard R.	302 North 13th, Fort Smith 72901	785-2425
O&G	Tate, William B.	1500 Dodson, Fort Smith 72901	782-2071
GP	Thompson, J. B.	605 Lexington, Fort Smith 72901	782-6081
RD	Thompson, J. Kenneth	3804 Free Ferry Road, Fort Smith 72903 (Res.)	783-5711
GP	Thompson, Robert J.	605 Lexington, Fort Smith 72901	782-6081
IM	Turner, William F.	1500 Dodson, Fort Smith 72901	782-2071
D	Vanderpool, Roy E.	Post Office Box 3528, Fort Smith 72913	452-2077
FP	Venturina, Arturo P.	Post Office Box 296, Huntington 72940	928-4404
CDS	Vernon, Rowland P., Jr.	1500 Dodson, Fort Smith 72901	782-2071
U	Wahman, Gerald E.	1500 Dodson, Fort Smith 72901	782-2071
OPH	Wallace, Kenneth K.	3000 Rogers, Fort Smith 72901	782-8892
PD	Walling, Robert V.	617 South 16th, Fort Smith 72901	783-3165
PD	Watts, John C.	500 South 16th, Fort Smith 72901	783-1085
IM	Webb, William K.	Post Office Box 3528, Fort Smith 72913	452-2077
GS	Weisse, John J.	912 Lexington, Fort Smith 72901	785-2616
HEM	Wells, John D.	Post Office Box 3528, Fort Smith 72913	452-2077
EM	Westbrook, Michael R.	1311 South "I", Fort Smith 72901	441-5011
AN	Westermann, Norman F.	1500 Dodson, Fort Smith 72901	782-2071
GYN	Whitaker, T. J., Jr.	1823 Dodson, Fort Smith 72901	782-4929
IM	White, J. Earle, III	1501 South Waldron, Fort Smith 72903	452-8661
RD	Whittaker, L. A.	2300 South "T", Fort Smith 72901 (Res.)	782-9437
ORS	Wideman, John W.	300 North Greenwood, Fort Smith 72901	783-0226
GS	Wikman, John H.	1500 Dodson, Fort Smith 72901	782-2071
CDS	Williams, Carl L.	522 South 16th, Fort Smith 72901	785-1413
CD	Williams, Thomas N.	1500 Dodson, Fort Smith 72901	782-2071
OTO	Wills, Paul I.	600 South 16th, Fort Smith 72901	782-6022
U	Wilson, Carl L.	1500 Dodson, Fort Smith 72901	782-2071
U	Wilson, Morton C.	1500 Dodson, Fort Smith 72901	782-2071
U	Wilson, Steven K.	1500 Dodson, Fort Smith 72901	782-2071
GE	Wooddell, W. Jeff.	Post Office Box 3528, Fort Smith 72913	452-2077
TS	Woods, Leon P.	1500 Dodson, Fort Smith 72901	782-2071
R	Worrell, John A.	1501 South Waldron, Fort Smith 72903	452-9416
GS	Zufari, Munir	522 South 16th, Fort Smith 72901	785-1413

#### SEVIER COUNTY

GS	8alch, James I.	Post Office Box 68, DeQueen 71832	584-3520
GP	Brown, Olie D.	Post Office Drawer 890, DeQueen 71832	642-2465
FP	Buffington, Mike	DeQueen Clinic, DeQueen 71832	642-2022
FP	Carlson, Kevin R.	North 4th and Heynecker, DeQueen 71832	642-2840
FP	Daniel, J. Frank	DeQueen Clinic, DeQueen 71832	642-2022
GP	Dickinson, George W.	Post Office Box 930, DeQueen 71832	584-2022
PTH	Dodd, Nathan L.	Post Office Box 312, DeQueen 71832	584-7111
FP	Jones, Charles N.	Post Office Box 391, DeQueen 71832	642-2022
GP	Pierce, Joseph B.	Post Office Drawer 890, DeQueen 71832	642-2465
GP	Pullen, Wayne G.	300 East Roosevelt Road, Little Rock 72206	372-8361
FP	Ridlon, Richard S.	North 4th and Heynecker, DeQueen 71832	642-2840
R	Williams, W. Curtis	Medical Arts Building, DeQueen 71832	584-4638

#### ST. FRANCIS COUNTY

#	Chaffin, E. J.	Hughes	
FP	Cogburn, H. N.	328 Kittel Road, Forrest City 72335	633-1425
GP	Collins, E. Morgan, Jr.	Post Office Box 989, Forrest City 72335	633-1952
FP	Collum, Grady R.	128 Broadway, Hughes 72348	339-2111
FP	Crawley, Charles E.	328 Kittel Road, Forrest City 72335	633-1425
GP	Fong, Fun H.	Post Office Box 735, Hughes 72348	339-2373
FP	Hammons, Edward P.	328 Kittel Road, Forrest City 72335	633-1425
IM	Hawley, Brian	328 Kittel Road, Forrest City 72335	633-1425
GP	Laney, J. Neal	1740 Lindauer, Forrest City 72335	633-4711
GP	McPhail, George T.	Post Office Box 989, Forrest City 72335	633-1952
PD	Prasad, Jaram D.	328 Kittel Road, Forrest City 72335	633-1425
FP	Sexton, Giles A.	1047 Glenn Lane, Fayetteville 72701	521-6611

#### UNION COUNTY

PD	Baldwin, Ronald L.	1411 North Jackson, Magnolia 71753	234-7912
U	Bowman, Raymond N.	619 North Newton, El Dorado 71730	862-5439
ORS	Callaway, James C.	516 West Faulkner, El Dorado 71730	863-6123
FP	Carroll, Peter J.	416 North Newton, El Dorado 71730	862-5573
GP	Clowney, A. R.	460 West Oak, El Dorado 71730	863-8116
OTO	Cyphers, Charles D.	519 West Faulkner, El Dorado 71730	862-3471
GP	Dunn, Tom L.	Post Office Box 538, Hampton 71744	798-4272
PTH	Duzan, Kenneth R.	443 West Oak, El Dorado 71730	862-1351
PTH	Elliott, Wayne G.	443 West Oak, El Dorado 71730	862-1351
IM	Ellis, Jacob P.	490 West Faulkner, El Dorado 71730	863-2287
RD	Fitch, Leston E.	38 Meadowbrook Drive, Conway 72032 (Res.)	329-3230
P	Fraser, David B.	715 North College, El Dorado 71730	862-7921
ORS	Giller, W. John, Jr.	516 West Faulkner, El Dorado 71730	863-6123
IM	Gray, Carlos E.	490 West Faulkner, El Dorado 71730	863-2286
IM	Hardin, Alvin S.	714 West Faulkner, El Dorado 71730	862-5184
GP	Harper, John W.	425 West Oak, El Dorado 71730	863-5135
ORS	Hartmann, Ernest R.	619 West Grove, El Dorado 71730	863-5146
FP	Hill, Grady E.	427 West Oak, El Dorado 71730	863-7158
PTH	Jennings, R. Duke	443 West Oak, El Dorado 71730	862-1351
GE	Jones, Steve A.	714 West Faulkner, El Dorado 71730	862-5184
R	Kieu, Dao Q.	Panorama City, California	
R	King, Billy D.	460 West Oak, El Dorado 71730	863-2253
OPH	Landers, Gardner H.	318 Thompson, El Dorado 71730	862-4216
GS	Menendez, Moises A.	412 North Washington, El Dorado 71730	862-3411
FP	Moore, Berry L.	490 West Faulkner, El Dorado 71730	863-2362
GS	Moore, John H.	412 North Washington, El Dorado 71730	862-3411



Type of Practice	Member's Name	Address	Telephone Number
U	Murfee, Robert M.	619 North Newton, El Dorado 71730	862-5439
PD	McKinney, J. Schuler	209 Thompson, El Dorado 71730	862-4994
R	Parkman, R. L., Jr.	460 West Oak, El Dorado 71730	863-2256
R	Pellizzetti, A. G.	Post Office Box 1497, El Dorado 71730	864-3370
AN	Pinkerton, Raymond E.	700 West Grove, El Dorado 71730	864-3484
IM	Pirnie, Allan S.	714 West Faulkner, El Dorado 71730	862-5184
OBG	Rabie, Fouad M.	445 West Oak, El Dorado 71730	863-4101
GP	Riley, Warren S.	Post Office Box 1982, El Dorado 71730	863-4508
OBG	Rodriguez, Victor M.	700 West Faulkner, El Dorado 71730	863-0440
R	Roesler, Marvin J.	700 West Grove, El Dorado 71730	864-3371
PD	Rogers, Henry B.	209 Thompson, El Dorado 71730	862-4994
D	Sample, Dorothy C.	525 West Faulkner, El Dorado 71730	862-5485
R	Schultz, Wayne H.	Post Office Box 1998, El Dorado 71730	862-2253
GS	Scurlock, William R.	412 North Washington, El Dorado 71730	862-3411
GP	Seale, James E., Jr.	528 West Faulkner, El Dorado 71730	863-7154
FP	Smith, George W.	704 West Grove, El Dorado 71730	862-7661
AN	Stevens, Willis M.	460 West Oak, El Dorado 71730	863-2275
PD	Sykes, James D.	209 Thompson, El Dorado 71730	862-4994
FP	Sykes, Robert R.	416 North Newton, El Dorado 71730	862-5571
OBG	Thibault, Frank G., Sr.	416 North Newton, El Dorado 71730	862-5403
GS	Tommey, C. E.	412 North Washington, El Dorado 71730	862-3412
OBG	Turnbow, R. L.	427 West Oak, El Dorado 71730	863-6157
FP	Warren, George W.	Post Office Box W, Smackover 71762	725-3471
IM	Weedman, James B.	714 West Faulkner, El Dorado 71730	862-5184
#	Wharton, Joseph B., Jr.	El Dorado	
OPH	Williamson, John R.	318 Thompson, El Dorado 71730	862-4216
IM	Wilson, Larkin M.	714 West Faulkner, El Dorado 71730	862-5184
OPH	Wilson, Paul H.	514 West Faulkner, El Dorado 71730	862-5352
OTO	Wise, J. F.	306 Thompson, El Dorado 71730	862-7918
GS	Yocum, David M., Jr.	412 North Washington, El Dorado 71730	862-3411

#### VAN BUREN COUNTY

GP	Hall, John A.	Post Office Box 310, Clinton 72031	745-2111
GP	Netherton, Cynthia L.	Post Office Box 147, Clinton 72031	745-2800
GP	Pearce, Charles G.	Post Office Box 51, Clinton 72031	745-2412
FP	Read, Paul S.	Route 2, Box 175-B, Fairfield Bay 72088	884-3377
GP	Stuteville, Orion H.	Route 1, St. Joe 72675	439-2555
GS	Tahir, Syed Z.	Post Office Box 521, Clinton 72031	745-2800

#### WASHINGTON COUNTY

D	Albright, Spencer D., III	1925 Green Acres Road, Fayetteville 72701	443-3413
GP	Applegate, C. Stanley	220 Meadow Avenue, Springdale 72764	751-4637
ORS	Arnold, James A.	Post Office Box 1608, Fayetteville 72701	521-2752
RD	Baggett, Jeff J.	Post Office Box 233, Prairie Grove 72753 (Res.)	846-2312
OTO	Baker, Clark M., Jr.	4255 Venetian Lane, Fayetteville 72701	521-1238
FP	Baker, Donald B.	241 West Spring, Fayetteville 72701	521-8260
FP	Benjamin, George H.	304 South Maxwell, Siloam Springs 72761	524-3141
GP	Box, Ivan H.	Post Office Drawer E, Huntsville 72740	738-2115
PTH	Boyce, John M.	104 Harris Lane, Springdale 72764 (Res.)	751-0652
U	Brandon, H. B.	2100 Green Acres, Fayetteville 72701	442-5229
RD	Brizzolara, Charles M.	5512 South Grandview, Little Rock 72207 (Res.)	666-5977
U	Brooks, W. Ely	Route 9, Box 219, Fayetteville 72701	521-8980
P	Brown, Spencer H.	4313 West Markham, Little Rock 72201	664-4500
FP	Buckley, Carie D., Jr.	767 West North, Fayetteville 72701	521-3600
PD	Burnside, Wade W., Jr.	207 East Dickson, Fayetteville 72701	443-3471
CD	Butler, G. Harrison	675 Lollar Lane, Fayetteville 72701	521-8200
FP	Capps, James A., Jr.	1215 South Thompson, Springdale 72764	756-0610
RD	Clark, LeMon	1679 Elmwood, Fayetteville 72701 (Res.)	521-7657
ORS	Coker, Tom P.	Post Office Drawer 1608, Fayetteville 72701	521-2752
OBG	Cole, George R.	740 Lollar Lane, Fayetteville 72701	521-4433
OBG	Councille, Clifford C., Jr.	1011 North College, Fayetteville 72701	442-9809
OTO	Crocker, Thermon R.	4255 Venetian Lane, Fayetteville 72701	521-1238
PD	Decker, Harold A.	207 East Dickson, Fayetteville 72701	443-3471
OBG	DeSandre, Frank A.	606 South Young, Springdale 72764	751-6284
AN	Dodson, C. Dwight	946 California, Fayetteville 72701 (Res.)	443-3387
RD	Dorman, John W.	2000 Pin Oak, Springdale 72764 (Res.)	751-4527
N	Dow, R. W.	3000 Market, Fayetteville 72701	442-4070
PUD	Duncan, Philip E.	675 Lollar Lane, Fayetteville 72701	521-8200
R	Edmondson, Charles T.	1605 Springcreek Road, Springdale 72764 (Res.)	751-0492
FP	Etherington, R. A.	41 Kingshighway, Eureka Springs 72632	253-9746
P	Finch, Stephen B.	530 North College, #E, Fayetteville 72701	443-3491
OTO	Fincher, G. Glen	2100 Green Acres Road, Fayetteville 72701	521-3363
FP	Gardner, Buford M.	Post Office Box 730, Fayetteville 72701	443-5291
D	Ginger, John D.	102 West Dickson, Fayetteville 72701	521-2525
R	Greenhaw, James J.	205 East Jefferson, Siloam Springs 72761	524-4141
IM	Hall, Joe B.	675 Lollar Lane, Fayetteville 72701	521-8200
R	Harris, Murray T.	Post Office Box 1286, Fayetteville 72701	521-6480
ORS	Harris, W. Duke	Post Office Drawer 1608, Fayetteville 72701	521-2752
OBG	Harrison, William F.	1011 North College, Fayetteville 72701	442-9809
FP	Hart, Hamilton R.	Post Office Box 1408, Fayetteville 72701	521-3600
RD	Hathcock, P. Loyce	909 Hall Avenue, Fayetteville 72701 (Res.)	442-4424
PD	Haynes, James E.	207 East Dickson, Fayetteville 72701	443-3471
ORS	Heinzelmann, Peter R.	Post Office Box 1608, Fayetteville 72701	521-2754
OPH	Henry, L. Murphey	Post Office Box 1267, Fayetteville 72701	442-5227
OPH	Henry, Louise M.	Post Office Box 1267, Fayetteville 72701	442-5227
OPH	Henry, Morris M.	Post Office Box 1727, Fayetteville 72701	442-2981
IM	Higginbotham, Hugh B.	675 Lollar Lane, Fayetteville 72701	521-8200
HEM	Hoge, Arthur F.	160-B Poplar, Fayetteville 72701	521-3386
FP	Huskins, James D.	304 South Maxwell, Siloam Springs 72761	524-3141
OBG	Hutchinson, Harry T.	304 South Maxwell, Siloam Springs 72761	524-3141
A	Hutson, Martha F.	2100 Green Acres Road, Fayetteville 72701	521-3363
CD	Inlow, Charles W.	Post Office Box 186, Springdale 72764	756-9185
P	Jarvis, Fred D., Jr.	Post Office Box 289, Springdale 72764	751-7052
NS	Johnson, Jorge H.	3000 Market, Fayetteville 72701	443-5245
P	Jones, Edwin C.	2011 Green Acres Road, Fayetteville 72701	442-9381
FP	Keagy, C. L.	41 Kingshighway, Eureka Springs 72632	253-9746
A	Koehn, Laura J.	2100 Green Acres Road, Fayetteville 72701	521-3363
PD	Lawson, Wilbur G.	207 East Dickson, Fayetteville 72701	442-6226
RD	Lesh, Ruth E.	356 North Washington, Fayetteville 72701 (Res.)	442-2163
RD	Lesh, Vincent O.	Pointe Clear Heights, Route 6, Box B3, Rogers 72756 (Res.)	925-1989
AN	Lesniak, James L.	Post Office Box 1062, Fayetteville 72701	443-2459
PTH	Lifton, Eva W.	1125 North College, Fayetteville 72701	442-1012
PTH	Lifton, Murray A.	Veterans Administration Medical Center, Fayetteville 72701	443-4301, Ext. 561
OBG	Lushbaugh, Harmon	740 Lollar Lane, Fayetteville 72701	521-4433
FP	Markland, Linda A.	241 West Spring, Fayetteville 72701	521-8260
GE	Martin, William C.	675 Lollar Lane, Fayetteville 72701	521-8200

Type of Practice	Member's Name	Address	Telephone Number
OBG	Mashburn, James D.	207 East Dickson, Fayetteville 72701	442-5377
GS	Miller, Charles H.	Post Office Drawer A, Fayetteville 72701	521-3300
R	Mills, William C., III	Post Office Box 1286, Fayetteville 72701	521-6480
IM	Moore, Arthur F.	675 Lollar Lane, Fayetteville 72701	521-8200
ORS	Moore, James F.	Post Office Drawer 1608, Fayetteville 72701	521-2752
GP	Moose, John I.	304 South Maxwell, Siloam Springs 72761	524-3141
GP	Morgan, Tad M.	803 Quandt, Springdale 72764	751-9236
GS	Murry, J. Warren	Post Office Drawer A, Fayetteville 72701	521-3300
R	McAllister, Joseph H.	Route 4, Box 188, Huntsville 72740 (Res.)	665-2735
RD	McAllister, Max F.	329 Oakwood Street, Fayetteville 72701 (Res.)	442-6522
OPH	McDonald, James E., II	461 East Township Road, Fayetteville 72701	521-2555
GP	McEvoy, F. E.	803 Quandt, Springdale 72764	751-9236
GS	McNair, William R., Jr.	160-A Poplar, Fayetteville 72701	521-1484
PTH	Nettleship, Mae B.	Post Office Box 817, Fayetteville 72701	442-1012
IM	Painter, Monroe B.	675 Lollar Lane, Fayetteville 72701	521-8200
ORS	Park, John P.	Post Office Drawer 1608, Fayetteville 72701	521-2752
OPH	Parker, Joe C.	700 South Young, Springdale 72764	751-1028
FP	Parker, Lee B., Jr.	241 West Spring, Fayetteville 72701	521-8260
FP	Patrick, James K.	241 West Spring, Fayetteville 72701	521-8260
U	Pickett, James D.	Route 9, 1300 Zion Road, Fayetteville 72701	521-8980
FP	Power, John R.	220 Meadow Avenue, Springdale 72764	751-4637
FP	Puckett, Billy J.	304 South Maxwell, Siloam Springs 72761	524-3141
OBG	Rabon, Nancy A.	Evelyn Hills Shopping Center, Fayetteville 72701	442-8261
R	Riddick, Earl B., Jr.	57 Colt Square, Fayetteville 72701	521-6971
GS	Rolufs, Lloyd S.	41 Kingshighway, Eureka Springs 72632	253-9746
OBG	Romine, James C.	740 Lollar Lane, Fayetteville 72701	521-4433
FP	Rouse, Joe P.	Post Office Box 1408, Fayetteville 72701	521-3600
GS	Rudko, Michael	908 Rolling Hills at Market, Fayetteville 72701	521-6780
NS	Runnels, V. Brian	Post Office Drawer 1608, Fayetteville 72701	521-2752
OPH	Sharp, Jim	102 West Dickson, Fayetteville 72701	521-4949
RD	Siegel, Lawrence H.	233 Oakwood, Fayetteville 72701 (Res.)	442-2083
OPH	Singleton, E. Mitchell	Post Office Box 908, Fayetteville 72701	521-4843
IM	Sisco, Charles P.	Post Office Box 65, Springdale 72764	751-4579
GP	Smith, Austin C.	Post Office Box 797, Huntsville 72740	738-2115
FP	Steadman, Hunter M., Jr.	Post Office Box 420, Bentonville 72712	273-9056
FP	Stinnett, Charles H.	304 South Maxwell, Siloam Springs 72761	524-3141
#	Van Felt, Ross	Holiday Island	
FP	Vinzant, John W.	22 East Spring, Fayetteville 72701	443-3417
AN	Viskovich, Borko B.	Post Office Box 4278, Fayetteville 72701	521-3832
R	Ward, Herbert W.	Post Office Box 1786, Fayetteville 72701 (Res.)	521-6556
FP	Weaver, Donald D.	Post Office Box 9, Gentry 72734	736-2213
FP	Weaver, Robert H.	Post Office Box 9, Gentry 72734	736-2213
GP	Wheat, Ed	130 North Spring, Springdale 72764	751-5704
A	Whiteside, Edwin	Post Office Box 1208, Fayetteville 72701	443-5241
FP	Whiting, Tom D.	803 Quandt, Springdale 72764	751-9236
GP	Wilson, Robert B., Jr.	Post Office Box 797, Huntsville 72740	738-2115
GS	Wood, Jack A.	Post Office Drawer A, Fayetteville 72701	521-3300

#### WHITE COUNTY

FP	Baker, Ronald L.	2900 Hawkins, Searcy 72143	268-5364
R	Bell, John E.	1300 South Main, Searcy 72143	268-8500
GS	Blue, Glen T.	Post Office Box 159, Searcy 72143	268-2441
GP	Bridges, Michael W.	Post Office Box 560, Bald Knob 72010	724-5197
#	Bridges, Olen W.	Searcy	
IM	Brown, Arnold R.	1105 Dobbins, Searcy 72143 (Res.)	268-2545
FP	Citty, Jim C.	2900 Hawkins, Searcy 72143	268-5364
GP	Edwards, Hugh R.	1300 South Main, Searcy 72143	268-5361
R	Elliott, Robert E.	1300 South Main, Searcy 72143	268-8500
GS	Farrar, Henry C.	2900 Hawkins, Searcy 72143	268-5364
FP	Formby, Thomas A.	2900 Hawkins, Searcy 72143	268-5364
OBG	Gardner, Jack R.	2900 Hawkins, Searcy 72143	268-5364
PTH	Golleher, James H.	Post Office Box 1128, Searcy 72143	268-7186
ORS	Green, Terry G.	910 East Race, Searcy 72143	268-8677
CD	Henderson, John C.	2900 Hawkins, Searcy 72143	268-5364
GP	Jackson, C. W.	Post Office Box C, Judsonia 72081	729-3435
IM	Johnson, David M.	2900 Hawkins, Searcy 72143	268-5364
FP	Joseph, Eugene A.	1300 South Main, Searcy 72143	268-7143
FP	Killough, Larry R.	1300 South Main, Searcy 72143	268-7143
RD	Kinley, James D.	Post Office Box 430, Beebe 72012 (Res.)	882-5400
FP	Kinley, J. Garrett	Post Office Box D-Z, Beebe 72012	882-3388
FP	Koch, C. W., Jr.	1407 East Race, Searcy 72143	268-5845
OPH	Lowery, Benjamin R.	408 West Vine, Searcy 72143	268-7154
GP	Maguire, Frank C., Jr.	Post Office Box 500, Augusta 72006	347-2131
U	Meacham, Kenneth R.	1300 South Main, Searcy 72143	268-4313
OPH	Nevins, William H.	Post Office Box 1054, Searcy 72143	268-2201
FP	Norris, E. Lloyd	401 West Center, Beebe 72012	882-3388
FP	Ransom, C. E., Jr.	1407 East Race, Searcy 72143	268-5845
D	Rasberry, Ronnie D.	Post Office Box 177, Searcy 72143	268-4322
GS	Rodgers, Porter R., Jr.	Post Office Box 159, Searcy 72143	268-2441
GS	Sanders, John K.	2900 Hawkins, Searcy 72143	268-5364
FP	Short, W. Harold	Post Office Box 340, Beebe 72012	882-5561
GS	Simpson, James A.	Post Office Box 159, Searcy 72143	268-2441
GP	Smith, Bernard C.	Post Office Drawer C, Bradford 72020	344-2788
N	Smith, Bob W.	Post Office Box 858, Searcy 72143	268-9815
PD	Stinnett, J. L.	2900 Hawkins, Searcy 72143	268-5364
FP	Tate, Sidney W.	1300 South Main, Searcy 72143	268-5388
CD	Weathers, Larry W.	Post Office Box 20, Searcy 72143	268-9869
PD	Weed, David H.	2900 Hawkins, Searcy 72143	268-5364
IM	White, William D.	2900 Hawkins, Searcy 72143	268-5364

#### WOODRUFF COUNTY

GP	Hendrixson, Basil E.	Post Office Drawer J, McCrory 72101	731-5525
FP	Rowe, James E.	Post Office Box 387, McCrory 72101	731-2511
GP	Wilson, Fred E.	Post Office Box 387, McCrory 72101	731-2511

#### YELL COUNTY

R	Berry, William L.	Post Office Box 59, Dardanelle 72834 (Res.)	229-4891
GP	Bull, L. J.	Post Office Box 217, Plainview 72857	272-4236
RD	Draeger, Louis A.	Post Office Box 638, Danville 72833 (Res.)	495-2770
GP	Edmondson, Rogers P.	Post Office Box 487, Danville 72833	495-7331
GP	Harris, Walter P.	Post Office Box 487, Danville 72833	495-2714
FP	Hodges, Jerry F.	Highway 22 West, Dardanelle 72834	229-4172
FP	Luker, Jerome H.	Post Office Box 337, Dardanelle 72834	229-4172
GP	Martin, Damon G. H.	Post Office Box 328, Ola 72853	489-5801
GP	Maupin, James L.	Post Office Box 337, Dardanelle 72834	229-4172



Type of Practice	Member's Name	Address	Telephone Number
GP.....	Pennington, James O.....	Post Office Box 68, Ola 72853.....	489-5241
FP.....	Ring, Gene D.....	Post Office Box 337, Dardanelle 72834.....	229-4172
GP.....	Russell, Gary W.....	Highway 22 West, Dardanelle 72834.....	229-4172

CODES FOR TYPE OF PRACTICE

A.....	Allergy	HEM.....	Hematology	PDC.....	Pediatric Cardiology
ADM.....	Administrative Medicine	IM.....	Internal Medicine	PH.....	Public Health
AN.....	Anesthesiology	NEP.....	Nephrology	PM.....	Physical Medicine and Rehabilitation
CD.....	Cardiovascular Diseases	N.....	Neurology	PS.....	Plastic Surgery
CDS.....	Cardiovascular Surgery	NM.....	Nuclear Medicine	PTH.....	Pathology
CHP.....	Child Psychiatry	NS.....	Neurological Surgery	PUD.....	Pulmonary Diseases
CRS.....	Colon and Rectal Surgery	OBS.....	Obstetrics	R.....	Radiology
D.....	Dermatology	OBG.....	Obstetrics and Gynecology	RHU.....	Rheumatology
EM.....	Emergency Care	OM.....	Occupational Medicine	TS.....	Thoracic Surgery
END.....	Endocrinology	ONC.....	Oncology	U.....	Urology
FP.....	Family Practice	OPH.....	Ophthalmology	OS.....	Other Specialty
GE.....	Gastroenterology	ORS.....	Orthopedic Surgery	RD.....	Retired
GER.....	Geriatrics	OT.....	Otology	+-.....	Medical Student
GP.....	General Practice	OTO.....	Otorhinolaryngology	*.....	Intern
GPM.....	General Preventive Medicine	P.....	Psychiatry	**.....	Resident
GS.....	General Surgery	PD.....	Pediatrics	F.....	Fellow
GYN.....	Gynecology	PDA.....	Pediatric Allergy	#.....	Deceased

INFORMATION OF INTEREST TO MEMBERSHIP

Mailing Addresses

Arkansas Medical Society Post Office Box 1208 Fort Smith, Arkansas 72902 Phone: 782-8218 Wats: 1-800-542-1058	Arkansas State Medical Board Joe Verser, M.D., Secretary Post Office Box 102 Harrisburg, Arkansas 72432 Phone: 578-2677
American Medical Association 535 North Dearborn Street Chicago, Illinois 60610 Phone: 312-751-6000	Drug Enforcement Administration 1 Union National Plaza, Suite 850 Little Rock, Arkansas 72201 Phone: 378-5981
Legal Counsel Mr. Michael W. Mitchell Post Office Box 1510 Little Rock, Arkansas 72203 Phone: 378-7870	Pulaski County Medical Society 500 South University, Suite 311 Little Rock, Arkansas 72205 Phone: 664-3402
Arkansas Department of Health 4815 West Markham Street Little Rock, Arkansas 72201 Phone: 661-2000	University of Arkansas College of Medicine Thomas A. Bruce, M.D., Dean 4301 West Markham Little Rock, Arkansas 72201 Phone: 661-5000

Meeting Dates

Arkansas Medical Society	Sunday, April 26 - Wednesday, April 29, 1981, Camelot Inn, Little Rock
	Thursday, April 29 - Sunday, May 2, 1982, Arlington Hotel, Hot Springs
	Thursday, April 21 - Sunday, April 24, 1983, Arlington Hotel, Hot Springs
	Thursday, April 12 - Sunday, April 15, 1984, Camelot Inn, Little Rock
American Medical Association House of Delegates	Annual Meeting June 7-11, 1981 Chicago
	Interim Meeting December 6-9, 1981 Las Vegas
	Annual Meeting June 13-17, 1982 Chicago
	Interim Meeting December 5-8, 1982 Miami Beach
	Annual Meeting June 19-23, 1983 Chicago
	Interim Meeting December 4-7, 1983 Los Angeles

Arkansas Medical Society Insurance Plans

Professional Liability	American Physicians Insurance Exchange 4099 McEwen Road, Suite 200 Dallas, Texas 75234 Phone: 214-386-6400
Professional Liability	The St. Paul Companies Little Rock Service Office 1600 First National Building Little Rock, Arkansas 72201 Phone: 376-4151
Professional Overhead Expense Plan Professional Men's Disability Plan	Rather, Beyer and Harper, Agents 362 Prospect Building Little Rock, Arkansas 72207 Phone: 664-8791
Life	Northwestern National Life Insurance Company Meyer F. Marks, Inc. Post Office Box 7267 Little Rock, Arkansas 72217 Phone: 664-7802
Medical, Surgical, Major Medical	Arkansas Blue Cross-Blue Shield Post Office Box 2181 Little Rock, Arkansas 72203 Phone: 378-2000
Workmen's Compensation Dividend Plan	Dodson Insurance Group Post Office Box 559 Kansas City, Missouri 64141 Phone: 816-361-3400

OFFICERS OF THE ARKANSAS MEDICAL SOCIETY

President.....	Kemal Kutait, 1120 Lexington, Fort Smith 72901 (Term expires April 1981)
President-elect.....	Purcell Smith, Jr., P.O. Box 5675, Little Rock 72215 (Assumes presidency April 1981)
First Vice President.....	Richard O. Martin, P.O. Box 339, Paragould 72450
Second Vice President.....	Frank E. Morgan, 410 Pershing Blvd., North Little Rock 72114
Third Vice President.....	Harold D. Purdy, 6924 Geyer Springs Road, Little Rock 72209
Secretary.....	Elvin Shuffield, 110 Doctors Park Building, Little Rock 72205
Treasurer.....	Kenneth R. Duzan, 443 West Oak, El Dorado 71730
Speaker, House of Delegates.....	Amail Chudy, 1801 Maple, North Little Rock 72114
Vice Speaker of House.....	W. P. Phillips, P.O. Box 3507, Fort Smith 72913
Journal Editor.....	Alfred Kahn, Jr., 1300 West Sixth, Little Rock 72201
Delegates to AMA.....	Joe Verser, P.O. Box 106, Harrisburg 72432 T. E. Townsend, 1420 West 43rd, Pine Bluff 71603
Alternate Delegates to AMA.....	A. E. Andrews, P.O. Box 689, Texarkana 75501 Richard Pearson, 1223 West Walnut, Rogers 72756
Councilors.....	
First District.....	Merrill J. Osborne, 1533 North 10th, Blytheville 72315 Asa A. Crow, #1 Medical Drive, Paragould 72450
Second District.....	Paul Gray, P.O. Box 2437, Batesville 72501 John E. Bell, 1300 South Main, Searcy 72143
Third District.....	L. J. P. Bell, 626 Poplar, Helena 72342 John Hestir, P.O. Drawer 512, DeWitt 72042
Fourth District.....	Raymond Irwin, 1220 West 42nd, Pine Bluff 71603 John P. Burge, Lake Village Clinic, Lake Village 71653
Fifth District.....	George Warren, P.O. Box W, Smackover 71762 Cal R. Sanders, P.O. Box 757, Camden 71701
Sixth District.....	C. Lynn Harris, P.O. Box 687, Hope 71801 Donald L. Duncan, 300 East 6th, Texarkana 75502
Seventh District.....	Robert F. McCrary, 505 West Grand, Hot Springs 71901 R. Jerry Mann, 416 Main Street, Arkadelphia 71923
Eighth District.....	W. Ray Jouett, 750 Medical Towers Building, Little Rock 72205 William N. Jones, 500 South University, Little Rock 72205
Ninth District.....	Morris M. Henry, P.O. Box 1727, Fayetteville 72701 Rhys A. Williams, P.O. Box 1118, Harrison 72601
Tenth District.....	Charles F. Wilkins, 3105 West Main Place, Russellville 72801 Ken Lilly, 1120 Lexington, Fort Smith, 72901



## HEADQUARTERS STAFF

Executive Vice President.....C. C. Long  
Associate Executive Vice President .....Miss Léah Richmond  
Assistant Executive Vice President.....Mr. Kenneth LaMastus

## COMMITTEE CHAIRMEN

Cancer Control: John R. Broadwater, 1500 Dodson, Fort Smith 72901  
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January, 1981

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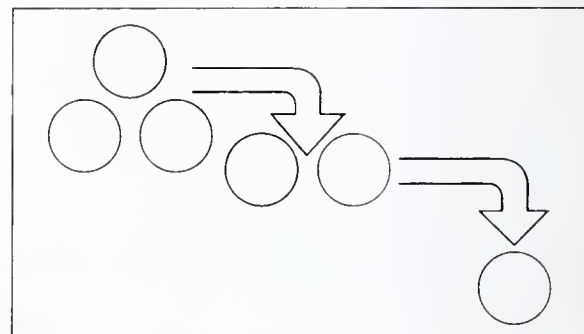
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# ANATOMY IN ARKANSAS' MEDICAL COLLEGE 1879-1979

## The History of a Department

Horace N. Marvin, Ph.D.\*

### Part II of IV Parts

#### "WHAT"

This is the second of four parts.  
The third part will be "To Whom."

#### WHAT

#### For Medical Students

The medical school in Arkansas opened when the national norm required that a student study three years under a licensed physician or a physician who had been granted a degree. During these three years, the student also was required to attend two full courses of lectures at some medical college or colleges. Each course of lectures consisted of Anatomy, Physiology, Chemistry, Materia Medica and Therapeutics, Obstetrics, Surgery, Pathology, and Practice of Medicine. The academic year included initially six eight-hour days a week, and twenty such weeks. Near the close of the second year, the student would stand for an oral examination by the faculty in all subjects of the curriculum. Satisfactory performance in this examination, with the usual personnel, ethical and moral characteristics, was followed by a diploma. Access to the lectures in any subject was obtained by paying a fee of \$50 for a "ticket" (Fig. 27); for all seven subjects an impressive total of \$350. Relative to the cost of living index at the end of the medical school's first century, this was a real problem for any student, but especially for rural students whose "money crop" was negligible.

Anatomy was presented in one group of lectures as general gross anatomy, and in another as surgical and practical anatomy. Charts, models, and blackboard drawings were used to illustrate

the professor's lectures. Staff members or an advanced student prepared prosected specimens for use by the professor during his presentations, and those who performed this service were included in faculty lists as "Prosectors." Following, and guided by the professor's lectures, the students dissected in the laboratory in order "to commence in the only practical method, and by dissection, fully and practically verify, for themselves, what they have learned from their anatomy plates."<sup>7</sup> For assistance in the dissecting laboratory the students purchased a \$5 Demonstrator's Ticket. Students were given the choice of the following texts, Gray's Anatomy, a text by Wilson, or one by Leidy. Gray's Anatomy has continued to be a national best seller, but the other two are not visible today.

This pedagogical format continued for the first thirteen years. Although a "voluntary graded course" had been available to students enrolled during this period, and had been urged as the most desirable arrangement, it had few takers. This preferred system consumed three academic years, with specific courses included in each year,

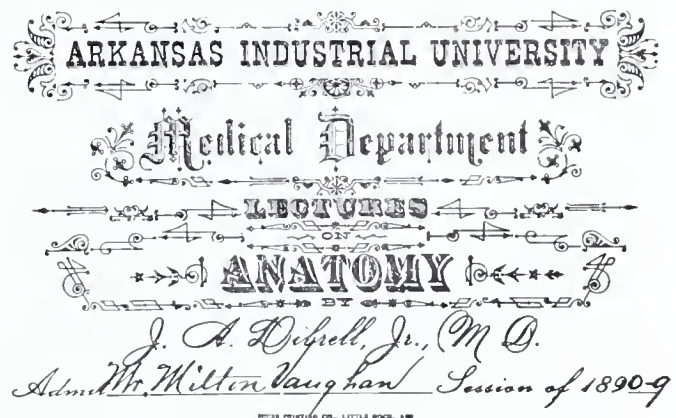


Figure 27.

A ticket issued to Mr. Milton Vaughan permitting him to attend lectures in Gross Anatomy as a "first course" student during the 1890-91 academic year.

\*Professor of Anatomy, The University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Arkansas 72201.



and with no repetition. The word "graded" derived from the plan to test students in each subject at the end of the year, with progress into the next year depending upon success in the examinations. Basically this is the arrangement used today, but apparently it was unpopular with students of the early years. Beginning with the 1892-93 academic year the three year graded course was adopted and was no longer "voluntary." This change and a lengthening of the academic year to twenty-four weeks came about primarily from pressure by the American Association of Medical Colleges. The curriculum following this change could be defined more precisely. General Gross Anatomy was taught in the first year, as was Physiology and Chemistry. Of the three courses, only Gross Anatomy with its dissection had any laboratory work included. Physiology was entirely didactic and recitative until 1896. Except for class demonstrations by the professor, Chemistry was without student laboratory work until 1905. Practical and Surgical Anatomy were taught in the second year along with Pathology and other courses introductory to clinical medicine. The third year was the clinical year. No information as to clock hours of contact or scheduling within the year is available. Cadavers were purchased legally by students for their dissections through the medical school "at a mere nominal expense."<sup>3</sup> This procedure, as well as legalizing dissection itself, was provided by a legislative act of 1873. No surreptitious efforts were necessary to obtain study material then or at any time since then. Some basis for the anecdotes told with relish cannot be obviated, however, when one considers the very poor financial resources of some of the early students.

Histology was listed in the curriculum for the first time in the bulletin for the 1893-94 year, not included among the anatomical subjects, but taught along with Pathology and Urinology in relation to clinical medicine. In this same year, Gray's Anatomy became the only text recognized officially. Shortly thereafter, 1895-96, the fourth year was added to the program.<sup>8</sup> This affected the existing programs not at all, but added another clinical year for a "review of all branches" of the clinical areas considered in the preceding third year. Beginning in this year Histology was listed separately as a first year course and Piersol's Textbook of Histology became the recommended text. Little information relative to this course in

this period is available, except that a member of the faculty continued to be designated as Professor of Histology and responsibility continued to rest with Pathology, not Anatomy.

Except for raising the cost of lecture tickets from \$50 to \$60 in 1902, and five years later introducing the use of the cadaver to illustrate surgical procedures in practical anatomy, the teaching of anatomy remained unruffled and probably unimproved for more than fifteen years (1890-1905). These were years of substantial enrollments, prosperity, and complacency.<sup>6</sup> Students were allowed broad choice of textbooks: Gray, Cunningham or Morris by the Professor of Anatomy; Schaeffer, Dunham, Baum, or Davidoff and Huber by the Professor of Histology and Pathology. In Gross Anatomy, didactic lectures were discontinued and replaced by quizzes and discussions of textbook assignments. The academic complacency was rudely broken by the opening in 1906 of a strongly competitive College of Physicians and Surgeons in Little Rock. Also at this time the Carnegie Foundation for the Advancement of Teaching had commissioned a study of medical education, a report of which contained Abraham Flexner's now well known statement concerning Arkansas. The medical school did not have "a single redeeming feature" according to the report in 1909, and except for dissection of the cadaver in "atrocious" quarters had no laboratory studies worthy of mention.<sup>2</sup> Resented then, and recalled with chagrin today, the report did shake complacency and started the school on an active period of reform.

For the first time departments were defined in 1908, and the faculty of the newly created Department of Anatomy was listed. Other changes followed which moved the school and the department toward conformity with medical education nationally. The Department of Pathology and Histology presented Histology as a freshman course. Neuroanatomy was mentioned for the first time, presented by the newly created Department of Diseases of the Nervous System. One year later, Embryology was listed in the freshman curriculum, presented by a faculty member in the Department of Anatomy. The professors' tickets increased to \$70 in 1909, and the next year the ticket system was abandoned in favor of a total tuition of \$100 for the year. It is interesting to note that there were six courses in the freshman year. With a \$70 ticket required for each course,

the total tickets would amount to \$420, compared with the new annual tuition of \$100. The fiscal acrobatics necessary to explain a 75% reduction in costs to the student would make interesting reading if the story were known. By 1910 the academic year had been increased to thirty-two weeks from the twenty-four weeks it had included for many years previously. Again the Flexner Report undoubtedly played a role in this improvement having said that "although the year is said to include twenty-four weeks (in 1905), students are allowed to enter several weeks late and vacations are so flexible that the statement is meaningless." And finally the clock hours of lecture and laboratory were tabulated for all courses, permitting comparative definition for the first time.

The total clock hours of student/faculty contact for each course derived from listings in the medical school bulletins beginning in 1910, are charted in Figure 28. Gross Anatomy in 1910-11 consisted of 576 clock hours, an assignment it held until 1915 when Surgical Anatomy was moved to another part of the program. In 1922-23, lecture hours were increased and topographic anatomy was included, which returned Gross Anatomy to nearly 600 hours. Since then the class time has been reduced gradually to the present day level of 200 clock hours. From Figure 28, it can be seen that no other anatomical courses had been increased to necessitate this reduction in time for Gross Anatomy. Rather the reduction had resulted from increased allocation of time to Biochemistry and Physiology as the importance of these disciplines to medicine have been increased by basic research.

Teachers of Gross Anatomy traditionally have depended heavily on charts, models, and extemporaneous drawings as teaching aids. Records of the magnitude of the utilization of such auxiliaries prior to 1920 are not available, but it would appear that use of visual aids other than the cadaver was meager. Some charts and models were purchased subsequently, as evidenced by the presence today of early Denoyer-Geppert Co. products obtained originally as imports from the superb German artisans. These cost so much, however, that the meager budgets could not tolerate more than token purchases. Various members of the faculty used their own talents, and large wall charts, some in color, and plaster casts of body parts were made for student use, and

thoroughly used until well into the 1940's. When classes were smaller, entire skeletons were placed in strategic places in the dissecting laboratory. At least by 1930, however, much larger classes made this impractical, and boxes with representative bones, including the skull, were prepared. Generally two students shared the use of a box, and this practice is followed today.

About 1944 Dr. Jeff Banks, with newly arrived Dr. Dwight Ryerson, undertook to place on

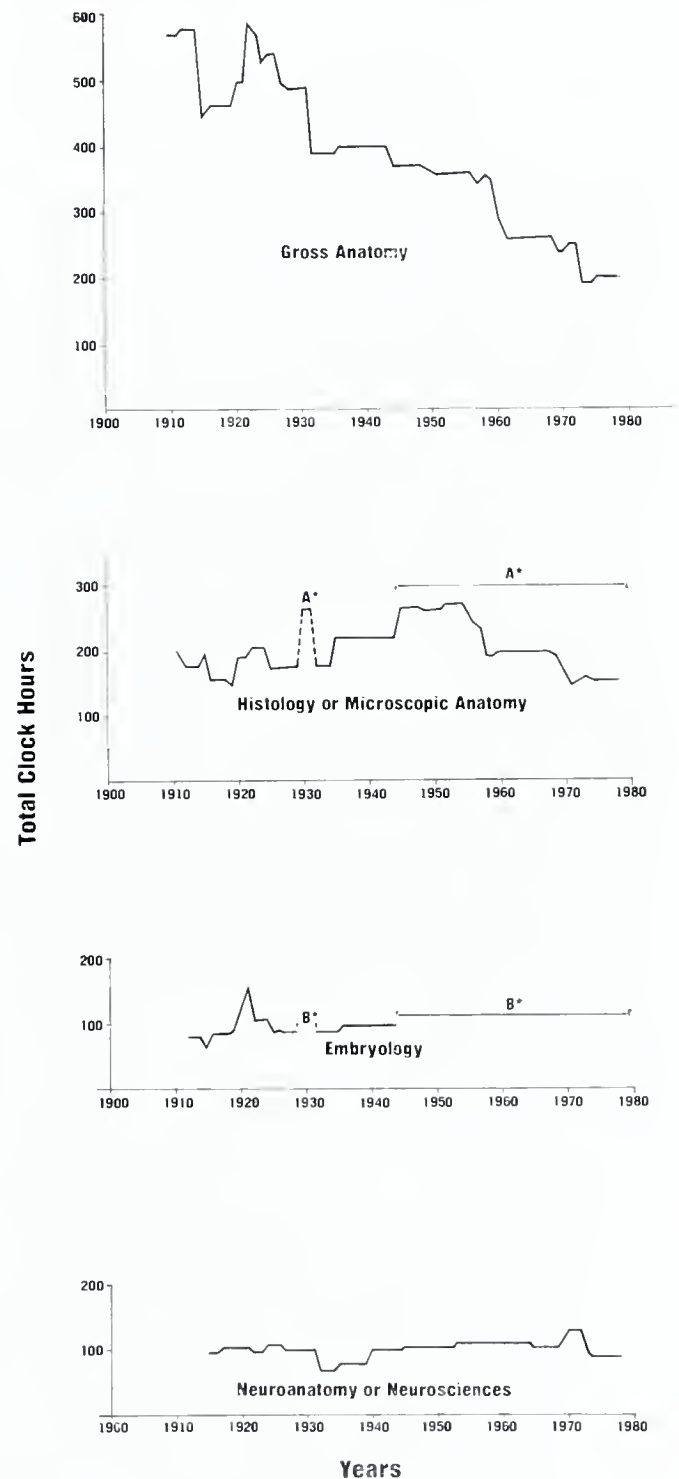


Figure 28.

A graphic representation of the total clock hours allotted to the four anatomy courses. In the Histology graph "A\*" indicates the span of time when Embryology and Histology were taught as one course. The "B\*" span in the Embryology graph indicates the span when Embryology was not taught as a separate course.



16 mm film a record of the dissection of the entire body. They were their own directors, photographers, stage managers, film developers, and in many instances their own financial backers. It was a tremendous effort with a commendable objective, but the films did not catch on with students here any more than they did at other schools. Since that time color transparencies have become practical in production and inexpensive in cost, and the movie films have been relegated to the archives.

A major experiment in the teaching of Gross Anatomy was initiated in 1974 and extended over several years. The teaching staff of the course was almost totally involved in determining whether reducing laboratory dissection by omitting dissection of the pelvis, perineum and lower extremity is possible without significant detriment to learning. A syllabus, many audiovisual aids, and prosected specimens were provided by the staff and a professional medical illustrator. Funds for this expensive two-year study were provided by the National Fund for Medical Education. Each year 20 students from the class of 125, representing the range of premedical qualifications, volunteered to follow the innovative program, and the remaining 105 followed the traditional program. Comparing pre-test with post-test results showed that learning was substantial, and retention into the junior year was surprisingly and gratifyingly good. It made no significant difference, however, whether students learned by dissecting, or relied primarily on prosections and audiovisual aids. Despite these results, and with the belief that dissection provides the student with benefits not measured by tests, the traditional program continues. It should be mentioned that this educational experiment was coordinated with two other medical schools, and the test results from Arkansas' students were the best.

Histology "covered the entire subject," and was "illustrated by stereoptican views and by charts." The laboratory part of the course (was) "thorough and complete" according to the Bulletin for 1911-12.<sup>9</sup> As mentioned previously, the Flexner Report had a substantially different view of what was thorough and complete. The information is very scanty but it is known that about 1910, twenty Leitz student microscopes were purchased for use in the Histology and Embryology laboratories. Slides of histologic sections, and

whole mounts of cells teased apart to show shape and major constituents, were prepared for student use, but how many and of what remains a mystery. A student enrolled in 1928 placed the number at about forty. One could count on blood being one of the studies, both as fresh material and stained. The laboratory work by the student included drawings of cells and tissues, the practical value of such efforts going unquestioned for many years. With advances in stain technology, special stains for special structures made it possible to demonstrate more and more cytological detail, and the loan sets grew. During the period 1930-1932, Embryology and Histology were combined, and the clock hours, consequently, increased from an average of about 150 to 260 for the course. The reasons for the union and then separation of these two courses are not apparent now. It may be more than a coincidence, however, that Dr. W. C. Langston, with both medical and graduate degrees, joined the faculty of the department while this conjoined course was in operation. Within the year after the author joined the faculty, combining the two subjects again was discussed, the decision was made to do so, and the combined program reinstituted in 1945. The subject matter began with the ovum and sperm, developed the fetus to a stage when the organ systems are established, followed the organ systems individually to the adult condition, concluded with reproductive systems, and finally fertilization and implantation completed the cycle. Although the rationale for this arrangement was "this is the way it happens," saving students' time during those urgent years of World War II was a strong motivation. From a total of 340 clock hours for the two courses separately, the time was reduced to 260 for the conjoined course. It was believed then that students obtained a better concept of the dynamic processes with no important losses. In addition to the usual study of adult tissues and organs in the laboratory, considerable time was spent studying whole mounts and serial sections of chick embryos, and serial sections of the 10 mm pig. After a few years of experience with this arrangement, a laboratory manual was written by Marvin and Langston, commercially printed, and sold at cost to the students. All the necessary drawings were included in the manual, and so with this publication in 1952, student drawings required for four decades came to a halt. The decrease in

clock hours from 260 to the current level of about 150 (Fig. 28) was brought about by the elimination of much of morphogenesis and histogenesis from study in the laboratory. Coincident with these changes, the microscopic slides for student use decreased from a maximum of about 250, attained when laboratory work in embryology was maximal, to 120 today. The emergence and rapid development of knowledge of intracellular structure brought about by the greater resolution of the electron microscope, as well as refined techniques in Biochemistry applied to these organelles, necessitated changes in Microscopic Anatomy. More time was devoted to this area at the expense of macromorphology. Yet students had no practical means for laboratory study of these structures, and again laboratory time was reduced. Clinical applications and relevance were introduced into the course in 1945, and initially took the form of an "embryology conference" several times during the program. A clinician, usually a pediatrician, would present a patient with a congenital anomaly of the organ system currently being studied. The classes were smaller then, and each student could have a first hand view and often a "hands on" contact with the patient. After the patient left the classroom, the normal embryological processes, and the deviations therefrom, were discussed and the remedial or reconstructive procedures were described. This stimulus to learning has been provided to students since then; now such a conference occurs nearly every week. Increase in class size has made patient presentation less rewarding, so that now it is the exception rather than the rule. Topics for the clinical conferences no longer are restricted to congenital anomalies, but encompass infectious, metabolic, and age related diseases. Concordant with the "new pedagogy" a syllabus was developed in 1974, containing in part condensations of each lecture, specific objectives of each laboratory period and sample questions to be expected on examinations. This, with a television preview of slides as described previously, provides for the rapid progress of the student toward the goal of acquisition of factual information.

Neuroanatomy first became a responsibility of the Department of Anatomy in 1915. Prior to that the subject was taught by physicians, as part of Neurology. The "anatomy and physiology of the nervous system (were) discussed<sup>9</sup> and the di-

agnosis of nervous and mental diseases thoroughly covered." There is little doubt that in this context, clinical considerations were at the forefront, and the clinic was the laboratory. As a course within the Department of Anatomy, however, "dissection of the brain and cord (was) followed by a study of Weigert series of sections of the brain stem. Microscopical preparations of the sense organs by various neurological methods (were) studied." The course as first described placed a great deal of responsibility on the student as evidenced by the concluding statement, "Occasional lectures and recitations are given."<sup>10</sup> Neuroanatomy continued to be taught in this same frame for more than a decade, despite changes in the faculty member responsible for the course. It was inevitable that a course which lends itself so well to clinical correlations, would sooner or later include clinical examples as problems for freshmen students. Thus in 1927 problems were incorporated in the course such as; "a lesion in ..... would result in what symptoms," and conversely "these symptoms would result from a lesion located." These problems, frequently hypothetical, gave to the student the flavor of clinical relevance so effective in stimulating learning. The course continued with the same number of hours for many years in much the same format using lectures, human brains for dissection, stained slides of the brainstem and cord, charts and models, and clinical problems. In 1969, however, a major change was started, following the example of some trial systems at other schools. Neuroanatomy in the strict interpretation became integrated with Neurophysiology into a new program appropriately called Neuroscience. Clinical orientation was substantially increased, and gradually smaller contributions of appropriate information from Biochemistry, Pathology and Pharmacology rounded out the course content. The faculty for the course was drawn from each of the disciplines involved, and the committee thus constituted had its own chairman. Not only the new philosophy, but the inclusion of more people in the teaching effort, required intensive initial planning, and annual revision of scheduling, and readjustment of content. Since its genesis the program has evolved into an effective course designed to integrate basic morphology and physiology with clinical manifestations.

In conclusion, the Department of Anatomy has



played a key role in introducing first year students to the study of medicine. The amount of a student's time allocated to the three divisions of anatomy is substantially more than any other single discipline in the first year, and the quality of the impact of this is a responsibility. It is imperative that the teaching, course content, personal guidance, and behavioral development of students be under constant surveillance and review. The old cliché that "It's not the length of life but the quality of life that matters" can be paraphrased to "It's not the course hours of contact, but the quality of contact that counts."

#### For Graduate Students

While still located at the Old State Capitol, requests for advanced work in Gross Anatomy and Histology were received, and consequently announcement was made in the 1929-30 Bulletin that advanced courses in either Gross or Microscopic Anatomy were available, the hours, subject matter, and course credit could be arranged. For the next two years course 100 Microscopic Technique, and course 101 Dissection of the Dog were listed. With the 1932-33 academic year additional changes were made: an elective, course 101 Special Histology, was added to present the "physiological phase;" course 102 Special Dissection of the human cadaver replaced dissection of the dog; and course 100 Microscopic Technique was continued. These listings continued in subsequent annual bulletins through 1947-48, and were elected by a few medical students, extramural college students, and occasionally by recently graduated physicians.

The master's degree program in Biochemistry at the medical school serving as an example, and with appointments to the faculty of anatomists fresh from strong graduate programs in other schools, interest for a similar program in the Department of Anatomy first stirred and then surfaced. Establishment of graduate level courses was the first step, and a list of "Elective Courses" appeared in the medical school's bulletin for 1948-49 (Table 4).

Application was made to the medical school Committee on Graduate Degrees for approval of a master's degree program in Anatomy, and formal approval was forthcoming. This meant that courses listed previously as "elective courses" in the medical school's bulletin would appear thenceforth in the catalog of the Graduate School. Each course, however, had to be con-

sidered individually by the Committee, with evaluation of the course design and content, the faculty member(s) presenting it, and the need for such a course not only in the department but by other departments at the medical school. These courses, appearing in the Bulletin of the Graduate School for the first time in 1949, are listed in Table 5. Although the master's program

**TABLE 4.**  
**"Elective Courses" Offered by the**  
**School of Medicine**  
**1948-49**

Course No.	Title	Faculty
5-1-5	Special Gross Anatomy	Dr. Banks
5-1-6	Research in Gross Anatomy	Dr. Banks
5-1-8	Special Histology	Dr. Langston
5-1-9	Special Embryology	Dr. Langston
5-1-10	Research in Microanatomy	Dr. Langston
5-1-12	Research in Neuroanatomy	Dr. McCullough
5-1-13	Microscopic Technique	Staff
5-1-14	Special Methods in Microscopic Technique	Staff
5-1-15	Anatomy Seminar	Staff
5-1-16	Research in Endocrinology	Dr. Marvin

**TABLE 5.**  
**First Listing of Anatomy Courses in the**  
**Catalogue of the Graduate School**  
**1949-1950**

Course No.	Title	Faculty*
4-1-1	Gross Anatomy: Dissection of thorax, extremities, and perineum	Dr. Banks
4-1-2	Gross Anatomy: Dissection of abdomen, pelvis, head, and neck	Dr. Banks
4-1-7	Microscopic and Developmental Anatomy	Dr. Langston
4-1-11	Neuroanatomy	Dr. McCullough
5-1-5	Special Gross Anatomy	Dr. Banks
5-1-6	Research in Gross Anatomy	Dr. Banks
5-1-8	Special Histology	Dr. Langston
5-1-9	Special Embryology	Dr. Marvin
5-1-10	Research in Microanatomy	Drs. Langston and Marvin
5-1-11	Visceral Anatomy	Dr. Banks
5-1-12	Research in Neuroanatomy	Dr. McCullough
5-1-13	Microscopic Technique	Dr. Langston
5-1-14	Special Methods in Microscopic Technique	Drs. Langston and Marvin
5-1-15	Anatomy Seminar	Staff
5-1-16	Research in Endocrinology	Dr. Marvin
5-1-17	Anatomy and Physiology of the Endocrines (sic)	Dr. Marvin

\*The faculty were not listed in the catalogue. The listings were taken from the Graduate Faculty listing in the catalogue and memory (HNM).

thus had become available it was not very much in demand. Part of the reason for this was its lack of market value as a professional degree. Experience was gained from the few students who did enroll, and supported by requests for doctoral work, an application for a doctoral program was prepared by the authors shortly after becoming chairman in 1958. The application was endorsed by the local committee on graduate studies, and approved by the Graduate Council of the University.

The spectrum of courses and their titles has changed since the initial listing appeared as emphasis and importance of cell biology has increased. The list as it appears in the current bulletin is extensive and presents advanced study in each of the major fields of Anatomy (Table 6). At the present time the courses in Gross Anatomy and Neuroscience suffice without modification both for medical students and graduate students. Microanatomy has provided, however, that graduate students receive additional depth and exposure to current research reports not presented to medical students. The remaining courses, al-

though available also to medical students, have been selected almost entirely by graduate students. No graduate student enrolls for all the courses, a certain number being selected in the field of interest and pertinent to the research being pursued.

Of central importance and magnitude has been the research pursued by the graduate student. The purpose, of course, is to furnish the student with experience in the many facets of research such as development of a question or problem, review and critique of the pertinent literature, construction of an experimental design, development of the necessary experimental techniques, analysis and interpretation of results, and finally projection of hypotheses for further investigation. Within the Department of Anatomy, as is generally customary, the research project for a master's thesis is more restricted and need not necessarily be a problem independently conceived by the student. Also it is of restricted magnitude so that it can be completed in one or two calendar years. In contrast the research problem of a student working toward a doctoral degree is conceived by the student as a result of that student's developing knowledge of a field of interest. It must be totally original work, and must yield results new to the field (or at least not published). The magnitude of the problem requires at least three years of effort, and frequently more. It is currently possible for a medical student to complete the requirements both for the medical degree and either a Master of Science or Doctor of Philosophy degree. In contrast to programs in departments in some other schools, here at Arkansas only a small number of courses of the two programs can be credited to the requirements of both. Although at the time of its inception here, only 75% of the anatomy departments nationally and 60% regionally offered the doctoral program, today the department in virtually every well established medical school has a program of graduate study.

One of the important and unique features of a graduate program is that which is learned but probably cannot be taught. Here included are the many intangibles that pass reciprocally between student and faculty advisor. In the daily association in the laboratory, and in formal and informal discussions, interchange takes place about research methodology, validity, reliability, scientific and social ethics/morals (if there be a

**TABLE 6.**  
**Anatomy Graduate Courses Listed in the**  
**Bulletin of the Graduate School**  
**1978-79**

Course No.	Title	Faculty
501-8	Gross Anatomy	Dr. Scheving
502-7	Microscopic Anatomy	Dr. Sherman
503-4	Neuroscience	Rotating
504-V	Advanced Gross Anatomy	Staff
505-V	Advanced Microanatomy	Staff
506-V	Advanced Neuroanatomy	Staff
509-3	General Endocrinology	Dr. Marvin
501-2	Fetal and Neonatal Anatomy	Dr. Gilmore
511-2	Low Temperature Biology	Dr. Sherman
512-1	Seminar	Staff
513-V	Research	Staff
515-1	History of Anatomy	Dr. Gilmore
518-2	Biology of Neoplasia	Dr. Burns
519-1	Peripheral Nervous System	Dr. Powell
520-2	Sleep-Wake Mechanisms	Dr. Lucas
521-1	Three-Dimensional Neuroanatomy	Dr. Powell
522-1	Neuroscience-Systems Review	Dr. Powell
523-1	Hypothalamus	Dr. Powell
524-1	Limbic System	Dr. Powell
525-2	Chronobiology	Drs. Pauly and Scheving
527-1	Molecular Cytogenetics	Dr. Cave
600-V	Master's Thesis	Staff
700-V	Doctoral Dissertation	Staff



difference), and who and what are academicians, and why are they. Life-long associations and bonds often are built because there are time, atmosphere and contacts to build them.

For at least the last forty years and perhaps longer, unsuccessful applicants to medical school, whose academic qualifications were almost but not quite adequate, were advised to enroll for a master's program and then reapply to medical school. Many did so, and their scholastic accomplishment for the first semester resulted in approval of their reapplication. Upon notification of this approval, they would resign from the graduate program before the first year was completed. This procedure caused problems in the graduate programs of the colleges in the state, and with the initiation of a graduate program in the Department of Anatomy, there also. This produced an artificially inflated graduate student attrition rate, a poor commentary on the quality of the graduate program. Accumulating experience within the department solidified the reluctance to accept applicants to graduate school who had been unsuccessful in applying to medical school. Consequently every effort was made to have assurance from applicants to graduate school that they would complete the program, at least to the master's level, but with only limited success. Finally a policy was established which deferred enrollment in medical school until all requirements for the graduate degree had been met, despite the fact that an application to medical school had been approved. This policy has been applied on one or two occasions, without any conviction that this distasteful procedure is the best solution. The problem remains, and creates difficulties for: the department, for the student who wishes to improve admissability to medical school, for the previous applicant to medical school who has a genuine change in career choice, and for the graduate student initially sincere in a choice of academics who subsequently decides on medicine

as an alternate career. The anatomists for future faculties will come from graduate programs such as these, and the viability and quality of these programs must be nurtured.

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# Arkansas' Mental Health System: Its Present Status and a Look to the Future

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## Introduction

During the last 25 years a revolution has occurred in Arkansas' mental health delivery system. The 1980 Statewide Comprehensive Mental Health Services Plan<sup>1</sup> indicates the average patient census in the state hospitals at Benton and Little Rock was about 5,000 in 1955. Today the Little Rock State Hospital has an average of less than 250. The average length of stay for acute psychiatric patients has fallen from 66 days in 1969 to 33.5 days in 1979. The facility at Benton is now a nursing home. It has an average census of 600, but less than half of these patients have a primary diagnosis of mental illness. The remainder are mentally retarded or have a physical disorder requiring long term care. In summary, the average census of these two facilities has dropped in 25 years from 5,000 to 850.

Most states have had similar experiences. The resident population of state and county mental hospitals declined from over 550,000 in 1955 to less than 200,000 by 1975.<sup>2</sup> The reasons for this are controversial. Some of them include: (1) invention and widespread utilization of psychotropic medications; (2) development of a system of community mental health centers and clinics; (3) improvement in state hospital inpatient treatment programs; (4) administrative decisions to limit state hospital size; (5) legal restraints on the length of hospital stay; (6) Medicaid and Medicare support for alternative community placements such as nursing homes and board and care homes. All of these, and perhaps others, have been responsible for the decline in inpatient census in Arkansas.

A phenomenon that has accompanied this decline in most states is an increase in readmissions<sup>3</sup> caused by: (1) failure of patients to follow prescribed drug regimens; (2) inadequate or inappropriate mental health aftercare programs; (3) lack of coordination between state hospital and community programs; (4) lack of acceptance of the psychiatric patient by his family or community; (5) insufficient vocational, rehabilitative,

and social welfare support; (6) excessive dependency of the patient on the psychiatric institution; (7) premature discharge from the hospital. In Arkansas, however, the admissions have declined from about 3,400 in 1969 to 2,400 in 1978.<sup>1</sup> At the same time, over 24,000 new patients were seen in Arkansas' community mental health centers in 1979.<sup>4</sup> While any conclusions from data of this type is tenuous, it does seem to indicate a marked improvement in inpatient services as well as the development of viable community alternatives to institutional care. Without each of these elements, it is doubtful that such data changes could have occurred.

Despite this past success, we enter the decade of the 80's with indications that grave difficulties may lie ahead. Federal funds supporting an extensive system of community mental health centers is diminishing and must be replaced from alternative sources. With an economic recession that may reach "depression" proportions, it is unclear whether the state can provide revenues to continue these programs. At the same time, there are increasing pressures to provide greater numbers of more specialized and costly services. This may force a critical examination of the mental health system and essential decisions that are politically unpopular.

In this paper I will present a brief overview of Arkansas' mental health system, with primary emphasis on programs funded by the Mental Health Services Division (MHSD). This will be followed by my views concerning the success of this system to date and a consideration of the issues that must be faced in the future. I must emphasize that the opinions expressed here are my own.

## Arkansas' Mental Health System: A Brief Overview

Any comprehensive mental health system must be prepared to provide a wide range of services that respond to individual patient needs. A diagram of such a system is shown in Figure 1. Its four components are acute inpatient care, long-term institutional care, alternative community living programs, and comprehensive community treatment. For maximum success, each component must contain programs for all types of

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patients. In addition, they must relate to one another across system boundaries so that patients are able to receive care in the appropriate setting.

Figure 1 shows that MHSD funds programs in each component as listed below:

(1) Arkansas State Hospital at Little Rock (ASH). A modern 360 bed inpatient facility for acute care which is fully accredited by the Joint Commission on the Accreditation of Hospitals (J.C.A.H.). ASH provides a full range of services for emotionally disturbed adults and adolescents, as well as a forensic evaluation and treatment program.

(2) Child Study Center Inpatient Treatment Program (CSC). Jointly supported by the Department of Psychiatry at the University of Arkansas for Medical Sciences and MHSD, this is the only inpatient facility in the state specifically designed for emotionally disturbed children. It has a current capacity of ten, and accepts referrals from all over the state.

(3) Benton Services Center (BSC). Formerly known as Benton State Hospital, this facility no longer serves acute psychiatric inpatients. It is licensed by Arkansas Social Services as an Intermediate Care Nursing Home of 630 beds. Its average census of about 600 is a mixture of mentally ill, mentally retarded, and physically impaired. These patients have a level of disability requiring long term institutional care.

(4) Community Mental Health Centers (CMHC's). There are 14 comprehensive CMHC's in Arkansas, each providing services to people in geographically defined catchment areas that completely cover the state (Table 1 and Figure 2). Two of these CMHC's, George W. Jackson CMHC

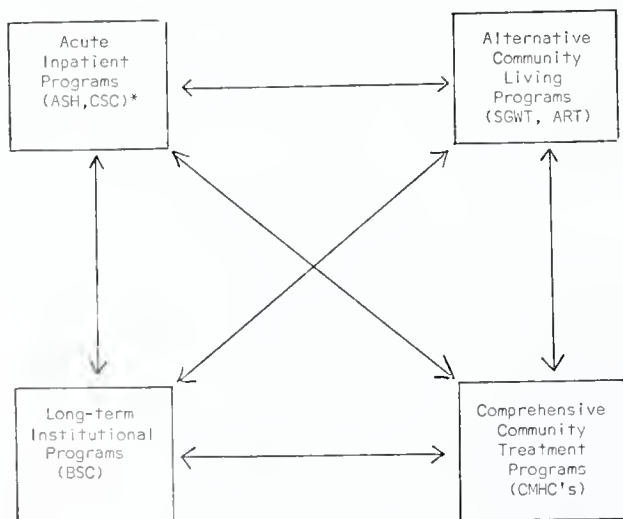
at Jonesboro and Greater Little Rock CMHC at Little Rock, are operated by MHSD. The remaining 12 are private non-profit corporations with their own governing boards of control. The services provided by these CMHC's are listed in Table 2. While each service is provided by all CMHC's, priorities determined by local governing boards decide specifics of the service delivery system. This approach helps to ensure the flexi-

**TABLE 1.**  
**Community Mental Health Centers**  
**in Arkansas (CMHC's)**

CMHC	LOCATION OF CENTRAL OFFICE
1. Ozark Guidance Center	Springdale
2. Ozark Regional Mental Health Center	Mountain Home
3. North Central Arkansas Mental Health Center	Batesville
*4. G. W. Jackson Community Mental Health Center	Jonesboro
5. Western Arkansas Counseling and Guidance Center	Fort Smith
6. Human Services Center of West Central Arkansas	Russellville
7. East Arkansas Regional Mental Health Center	Helena
8. Ouachita Regional Counseling and Mental Health Center	Hot Springs
9. Central Arkansas Mental Health Services	North Little Rock
*10. Greater Little Rock Mental Health Center	Little Rock
11. Southwest Arkansas Counseling and Mental Health Center	Texarkana
12. South Arkansas Regional Health Center	El Dorado
13. Southeast Arkansas Mental Health Center	Pine Bluff
14. Delta Counseling and Guidance Center	Monticello

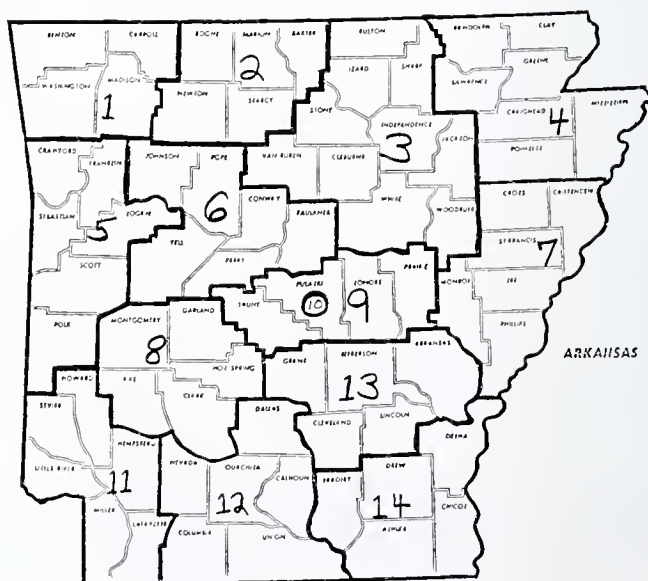
\*These two CMHC's are operated by MHSD. The remaining are private, non-profit corporations with their own governing boards of control.

Figure 1: A Comprehensive Mental Health System



\* These abbreviations designate the specific facilities and programs in Arkansas' mental health system that are funded by MHSD.

Figure 2: Community Mental Health Centers Catchment Areas



bility required to meet local needs that differ greatly from one area to another. While the 12 private, non-profit CMHC's are not actually operated by the state, they must comply with rather rigorous standards which ensure fiscal and programmatic accountability.<sup>5,6</sup> At the present time, all 14 CMHC's are in compliance with these standards.

(5) Small Group Work Therapy (SGWT). Located in Hot Springs, this is a nationally recognized program for the treatment of about 100 chronic mentally ill patients. These people live together in small groups in the community. Most of them work and consequently the fiscal support provided by MHSD is small. Since beginning in 1966, over 600 patients have utilized these facilities. The majority have gone on to live and work in many communities around the state.

(6) Comprehensive Adolescent Residential Treatment Program (ART). During the last legislative session, MHSD received increased revenue to develop new programs for mentally ill adolescents. A specialized inpatient unit at ASH and six comprehensive residential treatment programs have been created (Table 3). These residential facilities provide community alternatives to inpatient treatment and are essential to a system that attempts to meet very special adolescent needs.

These existing programs are all funded at least in part by MHSD. Other essential components of the total mental health system in Arkansas include: (1) Department of Psychiatry at the University of Arkansas for Medical Sciences; (2) Veterans Administration Hospitals; (3) other Divisions in the Department of Human Services — Office on Aging and Adult Services, Office on Alcohol and Drug Abuse Prevention, Mental Re-

tardation and Developmental Disabilities, Rehabilitation Services, Social Services, and Youth Services; (4) Department of Corrections; (5) private mental health professionals of various disciplines — psychiatrists, psychologists, social workers, psychiatric nurses; (6) physicians of disciplines other than psychiatry; (7) religious counselors. While a detailed discussion of these is beyond the scope of this paper, it is important to realize that perhaps even a majority of the emotionally ill patients in Arkansas are served by these providers who receive no fiscal support from MHSD. Any attempt to improve patient care by modifying the total mental health service delivery system must consider this fact. Otherwise, no matter how successful the endeavor, it will have impact on only a minority of patients. Joint planning, coordination of services, and pooling of resources is necessary for maximum success.

**Keys to the Success of the Present System**

In 1975, Arkansas ranked fortieth in per capita expenditures for mental health services.<sup>7</sup> Despite this fact, its mental health system is widely recognized as one of the best in the country. Reasons for this probably represent a combination of careful planning and fortuitous circumstances. Some of the specific factors that have contributed are as follows:

(1) Size of the state. From a geographical and population standpoint, Arkansas has a system that is manageable. The size of some states and their large number of psychiatric patients creates logistical nightmares that defy administrative solutions and drastically increase costs. Arkansas also has special problems created by its population and geography, but neither the numbers nor the distances are overwhelming.

(2) Leadership at the state and community level. In the last three decades, this system has been blessed with a number of exceptional mental health leaders. George W. Jackson, M.D., literally

**TABLE 2.**  
**Services Provided by CMHC's**

- 1. 24 hour emergency services
- 2. Inpatient services
- 3. Partial care services
- 4. Outpatient services
- 5. Consultation-education services
- 6. Children's services
- 7. Services to the aged
- 8. Initial screening and precare services
- 9. Aftercare and follow-up services
- 10. Intermediate residential care
- 11. Services to alcoholics and alcohol abusers (including preventive component)
- 12. Services to drug abusers (including preventive component)
- 13. Diagnostic and liaison services

**TABLE 3.**  
**Comprehensive Adolescent Residential Treatment Programs in Arkansas (ART)**

ART	LOCATION
Southwest Arkansas Mental Health Center	Pine Bluff
Ozark Guidance Center	Springdale
Southwest Arkansas Counseling and Mental Health Center	Texarkana
North Central Arkansas Mental Health Center	Batesville
*Youth Home, Inc.	Little Rock
East Arkansas Regional Mental Health Center	Helena
*This is the only ART not operated by a CHMC.	



brought the state hospital out of the "dark ages" to national recognition. His clinical and administrative talents, political savvy, courage, and empathy enabled MHSD to develop a modern, progressive approach to treatment. The fact that he led MHSD for over 25 years is a testimony to his abilities. This stable leadership offered protection to a growing mental health system and prevented the disruption that follows repeated changes in administration. Job security enjoyed by clinical and administrative staff enabled many to acquire skills to develop and operate a complex mental health system.

Since the mid 1960's, mental health leaders have also appeared at the community level and they have had a significant impact on the system. Talented, innovative, politically conscious, and adept at securing federal funds, they have developed a state-wide system of CMHC's that compares favorably with any in the nation.

(3) Political support. A number of key politicians have supported mental health programs through the years. Without their endorsement, the type of expansion that has occurred simply would not be possible. Most have little formal knowledge about mental health programs and their support is based primarily on trust in the mental health leadership. So far, state and community leaders have been able to fulfill this trust by developing programs that are effective, efficient, and responsive to local and state-wide needs.

(4) Citizen involvement. The public is extensively involved in Arkansas' mental health system. In fact, they literally run it. MHSD is controlled by a five-member State Hospital Board that sets all policies and hires the Commissioner of Mental Health. Similarly, the private, non-profit CMHC's are controlled by local governing boards that set all policies and hire the Executive Directors.

In addition to this formal control, citizens comprise a number of advisory committees and councils that assist MHSD and CMHC's in planning, developing, and monitoring the mental health system. This type of involvement is important for several reasons. First, it provides a measure of protection from the political process. Since the State Hospital Board and the CMHC governing boards are mandated by state and federal law respectively, they have some protection from capricious political forces. Second, it helps ensure that relevant programs are developed that re-

spond to local and state-wide needs. Third, it produces a broad base of political support that is essential in obtaining sufficient funds. Fourth, it serves as a vehicle to offset some of the common misconceptions about mental illness and mental health programs. Fifth, it stimulates mental health professionals in the various components of the total system to work together in a unified attempt to solve problems. Considerable professional competitiveness is prevented through citizen involvement.

(5) Highly qualified clinical and administrative personnel. Programs are only as good as the people who work in them. Through the years, the mental health system has trained, recruited, and retained sufficient clinical and administrative personnel to develop and operate quality programs. With the help of the academic institutions, viable training programs have developed in each of the core mental health disciplines. These programs attempt to provide training that is pertinent to service needs. State and community leaders have also created milieus that are conducive to recruitment and retention and every effort is made to secure adequate monetary rewards.

(6) Support for state and local programs. In an era of fiscal restraint and competition for resources, support has increased for all elements of the mental health system. In recent years, community programs have received larger increases in state revenues than the state institutions, but no component has been sacrificed to develop another. More than any other, this ability to fund a broad range of services is responsible for success. It requires the combined and coordinated efforts of state and community leaders, key politicians, and active citizens.

#### **Issues Critical to Future Success**

While the mental health system in Arkansas has come a long way in the last 25 years, much needs to be done to ensure that this favorable trend will continue. A simplistic approach is to state that those factors contributing to past success must be continued. Sound leadership, political support, citizen involvement, quality personnel, and financial stability will all be necessary. There are a number of specific issues that appear to be especially crucial:

(1) Unified mental health system. Despite the fact that this system has multiple components (Figure 1) with different sources of control, it is vital that they be held together in a unified man-

ner. There are several reasons for this. First, securing adequate funding through the political process is easier if a "unified front" is maintained. Each component lobbies for the entire system and this coordinated effort has a much greater effect. Second, care is improved if the components are tied closely together so that patients can move from one setting to another without leaving the system. Third, efficiency is increased and duplication of services prevented by components depending on each other for support. Fourth, destructive conflict among various components is prevented. If all concerned can appreciate the importance of holding together the entire system, it is less likely that one part will sacrifice another for its own gain.

This coordinated approach is difficult to achieve and even harder to maintain. It requires citizen involvement and solid leadership at the state and community level that are committed to a unified system and yet sensitive to the special needs of each component. With multiple components there are numerous opportunities for conflict. Its occurrence is inevitable. Conflict, *per se*, is not necessarily destructive. It may lead to greater understanding and a positive effect. A spirit of give and take is needed. Each component must relate to the others with honesty, regard, and trust. They must be honest in discussing freely their expectations and concerns, hold the others in regard, and demonstrate their trust by behaving as if all parties will act in good faith. If this spirit does not exist, it will soon be replaced by suspicion, distrust, and feelings of abuse. Under these circumstances, a unified system is impossible and will soon be torn apart into several "camps of war."

(2) Broad base of support. Active participation by citizens and their political leaders will be even more important in the future. I have previously listed several practical reasons why this type of involvement is needed. A more basic consideration, often forgotten, is that these programs actually belong to the people. It is appropriate that they should be part of the process. The era of building services for people without considering their desires is over. They ask to have a say in what is done by institutions and professionals that claim to act in their best interest. Unless we continue to encourage their participation and listen carefully to what is said, a more militant style of confrontation is inevitable. It has already occurred in numerous settings around the coun-

try. The leaders of our mental health programs must realize that the ultimate source of power in this country rests with the people. In any direct confrontation, it is their views that will ultimately prevail. The way to prevent such an occurrence is through the active involvement of citizens in programmatic planning, implementation, and evaluation.

(3) Community control of community programs. As I noted earlier, CMHC's are controlled by their local governing boards. These citizen boards set policies and priorities and hire the chief administrators of the CMHC's. From time to time, the suggestion has been made that the state should "take over" these programs. Concern is expressed that the state is putting money into programs that it doesn't control completely. This sentiment may well increase if the amount of state support rises in the future. The logic behind these opinions is faulty, and it is essential that local control continue. The reasons are partly the same as those for citizen involvement and a broad base of support. In addition, several other points should be made. First, while state money for CMHC's has increased, it still represents less than 35% of their total budgets.<sup>8</sup> The remainder consists of federal grants, Title XIX and XX, private fees and insurance, and local donations. Second, it makes good administrative sense to continue local control. It would be impossible to effectively manage such a complex system of CMHC's from Little Rock. A whole network of administrative personnel would have to be hired and trained. Complex and rigid policies regarding everything from personnel to purchasing would destroy local flexibility. The net result would be to increase overhead at the expense of clinical programs. If communities are to assume the responsibility of providing services for the mentally ill, they must have the appropriate authority to do so. Third, while it is true that the state does not have complete control over these programs, there are several mechanisms which help safeguard the public investment. A rather stringent set of programmatic and fiscal standards for CMHC's<sup>5,6</sup> have been developed, and MHSD regularly monitors for compliance. This process ensures accountability while allowing the CMHC's flexibility to respond to local priorities for services. In addition, the governing boards are responsible under the law for the operation of the CMHC's.<sup>9</sup> These local citizens have first-hand knowledge about the effectiveness



and efficiency of their programs and this helps ensure that they are operated appropriately. Finally, the state legislature has the authority to perform complete audits of CMHC's at any time they feel it's warranted.<sup>10</sup>

(4) Stable funding for state and community programs. As I mentioned previously, state support for all mental health programs has continued to increase. Originally, MHSD received state funds to operate only its mental institutions. The private CMHC's, on the other hand, began as separate entities by acquiring federal money. It was not until 1969 that MHSD received legislative approval to begin state support of these programs. Since that time, this level of funding has increased steadily to \$5,720,000 in fiscal year 1980.<sup>10</sup> Money is appropriated on a per capita basis so that each CMHC receives an amount that depends upon the population of its catchment area.

In 1979, the legislature approved another type of state funding for CMHC's. Called "Distress Funding," it is additional support for those CMHC's that have lost their large federal grants. Getting the Legislature and the Governor to accept the necessity of this type of funding represents a major step toward stabilizing the mental health system. It is required because of the way the Federal government funds CMHC's. Their support is intended to be only "seed money" to allow community programs to get started. It decreases over a period of about eight years, at which time the CMHC is supposed to be self-supporting. Very few CMHC's around the country have been able to become financially independent and still provide a comprehensive range of services to all patients. This is so because most CMHC clients don't have the money or private insurance to pay for their own services, alternative federal sources of support under Title XIX and XX have not been sufficient, and National Health Insurance is still on the drawing board. Unless declining Federal funds are replaced, CMHC's will be forced to discontinue some of the services they provide (Table 2). Such a cut-back would threaten the existence of a key component in the total mental health system (Figure 1). It would also increase the number of admissions to ASH and raise the total cost of providing mental health care. By continuing to support CMHC's with regular per capita and distress funding, the state can help ensure that these programs have a sound financial base. To do so makes good

programmatic and fiscal sense.

It is also clear that the state institutions need stable fiscal support. Despite increasing numbers of community alternatives, most mental health experts agree that some type of state hospital services will always be needed. Improving the care of the mentally ill inside these institutions has been partly responsible for shorter lengths of stay and decreasing inpatient census. Providing quality care and active treatment requires ample staff and modern facilities that are expensive. Without this effort, institutions will rapidly deteriorate to disgraceful warehouses of human misery. This must not be allowed to happen again.

In a time of fiscal restraint, how can adequate state funding for these programs be secured? In a sense, this entire section of my paper consists of issues that are critical to securing adequate support. Those endeavors that are necessary for the continued success of the mental health system are also important for securing required finances.

(5) Filling the gaps in the system. To remain viable, a mental health system must attempt to respond to the needs of the people it serves. It must provide a wide range of services and make every effort to secure those that it doesn't have. Figure 1 indicates that facilities and programs exist in each component of a comprehensive mental health system. Under the direction of MHSD, an assessment of existing and needed mental health programs has been underway during the last year. This was required to produce a State Comprehensive Mental Health Services Plan<sup>1</sup> that will serve as a guide for developments over the next five years. While many modifications are suggested, this process identifies several areas in the system that either need to be expanded or to be initiated. First, additional "Distress Funding" for CMHC's is recognized as a critical need. This was discussed in the previous section. Second, the initiation of a research and evaluation effort is supported and is examined in (7) below. The third, fourth, and fifth major areas identified are expanded services for children, chronic mentally ill, and adolescents respectively.

Two types of additional services are needed for children. An expansion of the existing inpatient program in the Child Study Center at the University of Arkansas for Medical Sciences is required. That program has a present capacity of 10 beds to serve the entire state. It is almost al-

ways full, with a waiting list of several weeks. At a time when the inpatient census at the University Hospital is relatively low, there seems to be few valid reasons to prevent an expansion. This is especially so when one considers that almost all these children are covered by Medicaid. Little, if any, additional resources will be needed.

The other major deficit in services for children is in the area of alternative community living programs. The few that do exist, such as the Elizabeth Mitchell Children's Center in Little Rock and The Ark in Pine Bluff, do not have adequate facilities to meet the need. Additional residential homes and therapeutic foster care placements are required. These alternative treatment programs are especially vital for young children with emotional problems. Rarely do they need extensive hospital care. It creates far more problems than it solves.

These Community programs are also needed to complete a comprehensive system of treatment for children that will remove pressure and unwarranted, adverse publicity from the CSC inpatient program. Without these referral sources, a common scenario evolves in which a child is sent to the CSC, treated, and prepared for discharge. The only placements often available, however, are parents who are not able to adequately care for their child or untrained foster parents. The child is either discharged to one of these or kept as an inpatient until a more suitable placement can be found. In either case, his condition commonly deteriorates and the CSC is blamed for "not curing" him. More treatment alternatives in the community would prevent this.

The chronic mentally ill patients in Arkansas, as in most states, are grossly underserved. The Small Group Work Therapy program has been an effective resource, but only a minority of these patients have been able to use it. This inadequate care probably represents a combination of negative attitudes, insufficient information, lack of awareness, fragmented federal and state fiscal and administrative policies, and lack of specialized training.<sup>11</sup> The result is that services for these people are disorganized. No one has been given the responsibility and commensurate authority to coordinate a comprehensive service system that meets their clinical, vocational, rehabilitative, and social requirements.

What is needed in Arkansas is a community support program similar to that defined by

NIMH as: "A network of caring and responsible people committed to assisting a vulnerable population to meet their needs and develop their potentials without being unnecessarily isolated or excluded from the community."<sup>12</sup> Staff and resources need to be provided to perform the functions of a community support program as listed in Table 4.

In Arkansas most of these components already exist. Still needed are a case management system as discussed in (6) below and alternative living programs listed in Table 4 as "psychosocial rehabilitation services" and supportive services of indefinite duration. Many patients, who have repeated admissions to ASH or who are inappropriately living in nursing homes, board and care homes, and flop houses, could live more independent and productive lives with the support offered by these programs. In addition, adult patients, still living at home with their parents, are oftentimes better managed in such facilities.

During the last two years, MHSD has placed a great deal of emphasis on services for adolescents. A new inpatient unit at ASH and six comprehensive adolescent residential treatment programs (Table 3) have been developed. Much still needs to be done to coordinate the programs of the various divisions in the Department of Human Services that have impact on adolescents. This will be discussed in (6) below. In addition, more resources are needed to expand the therapeutic foster care program for adolescents so that a broader range of community alternatives are available.

**TABLE 4.**  
**The Components of a Community Support Program<sup>12</sup>**

1. Identification of the population — outreach to offer appropriate services.
2. Assistance in applying for entitlements.
3. Crisis stabilization services in the least restrictive setting — hospitalization available if needed.
- \*4. "Psychosocial rehabilitation services" — transitional living, socialization, vocational rehabilitation.
- \*5. Supportive services of indefinite duration — sheltered living, supportive work, daytime and evening activities.
6. Medical and mental health care.
7. Back-up support to families, friends, and community members.
8. Involvement of concerned community members in planning.
9. Protection of client rights in the hospital and the community.
- \*10. Case management.

\*Major components of a community support program that need to be developed in Arkansas.



To correct these present deficiencies, and prevent future ones, this mental health system will have to secure a stable base of state support as noted in (4) above. It must also respond to federal initiatives that address the needs of children and adolescents<sup>13</sup> and the chronic mentally ill.<sup>12,14</sup> In fact, loan money has recently been obtained from HUD<sup>14</sup> to develop housing for some chronic psychiatric patients. Just as important, coordination of the various human service programs is needed to improve efficiency and cut costs.

Despite these efforts, it is unlikely that there will be enough revenue to do everything. At this point, the painful process of setting priorities must occur. This is a dangerous endeavor as the entire concept of a unified and comprehensive mental health system is threatened. If programs do not receive all they desire, they may be tempted to "break out" of the system and lobby individually for funds. This can be prevented by exactly the same process that identified the specific deficiencies in the present mental health system. The broad based, citizen group that prepared the new five year Statewide Comprehensive Mental Health Services Plan<sup>1</sup> should take the lead in recommending priorities for funding new mental health services. There is no better group to do it than these representatives of the people who own the system. It certainly should *not* be done by the professional staff of either the state or community programs. They are too invested in their own turf to be objective. It is the responsibility of the staff to provide quality data and information, but the group itself should make the final recommendations. Mental health and political leaders should then be formally notified of their decisions.

If sufficient resources are not available to fund the improvements identified, this group should perform a detailed and critical examination of existing state *and* community programs to decide if their continuation is more important than these improvements. To continue current programs in the future, just because they've existed in the past, is not appropriate. Justification must be based on the quantity and quality of the service provided and its contribution to the mental health system as a whole. With reasonable data to substantiate the recommendations of such a group of citizens, it is unlikely that attempts to politically bypass the system would be successful.

(6) Coordination of services. It is difficult to ensure continuity of care across the boundaries between components in a mental health system (Figure 1). Patients frequently are lost to follow-up as they "fall through the cracks" when transferred from one component to another. Similar problems exist at the boundaries between the mental health system and related service systems such as the other Divisions in the Department of Human Services, Department of Corrections, etc. Children, adolescents, and the chronic mentally ill, who require services from several different government programs, have a difficult time getting what they need.<sup>15</sup> No one is responsible or has the required authority to organize a coordinated and comprehensive system of care. Consequently, no one is accountable when difficulties occur. These problems can be solved with a formal case management system and a top level task force that has responsibility, authority, and resources.

A case manager has responsibility for the *total* care of patients, no matter where they are found in the system. It should be obvious that such responsibility is possible only with commensurate authority and resources. Each division and department in state government must recognize its responsibility for these patients and provide case managers with the authority to do their job. Case managers bring together representatives of relevant government programs to produce a practical treatment plan. They are not necessarily responsible for providing care themselves, but must ensure that treatment plans are followed. This is true no matter what the plan — medication, psychotherapy, housing, welfare, vocational training, residential care, or whatever. A case manager is a vigorous patient advocate.

While a step in the right direction, this case management system will not solve all coordination problems. Conflicts may occur over responsibility, and existing programs may not be sufficient to meet the needs of especially complicated cases. A task force should be created consisting of the Director of the Department of Human Services, the Commissioners of the divisions in the Department of Human Services, the Director of any other relevant departments (e.g. Health, Corrections), a member of the Governor's staff, and ex officio members of the State Senate and House of Representatives. This group *as a whole* should be given the explicit responsibility for *all* the problem cases requiring services from multi-

ple organizations. Legislative action may be needed to provide the authority and resources to discharge this responsibility. To be effective, this task force must consist of top level administrators who are able to make decisions affecting their organizations. They will serve as a source of authority and support for the case managers, clarify issues of responsibility and accountability, modify policies and programs, and shift limited resources to respond to needs. Unless the members of this task force have the authority to speak for their organizations, this effort will not succeed.

The potential benefits of this combined case manager/task force approach are tremendous. First, there will be a dramatic improvement in the continuity of care as patients cross boundaries in the mental health system and between this and other related systems. Second, accountability will increase as provider responsibilities are clarified. Third, it will be easier to identify deficits in the comprehensive approach to services. Legal conflicts, funding problems, administrative obstacles, etc., will repeatedly come to the attention of case managers and the task force. Coordinated planning efforts can be initiated to resolve them. Fourth, coordinated planning will lead to uniform program standards across agencies, combined monitoring, and improved efficiency.

Even more important, I think such an approach will put to rest the idea that the answer to caring for all complicated patients is to be found in institutions. For example, there are some who advocate that this state needs a more centralized approach to the care of children, adolescents, and chronic mentally ill. They think an institution should be created to ensure appropriate evaluation and comprehensive care for these difficult cases. This reasoning is faulty. People do not get well in institutions. Their symptoms may abate, but they don't learn how to live with their families or in their communities. In addition, patients follow resource allocations. The best way to have an expensive institution full of patients is to build one and then give it special funding. It's a self fulfilling prophecy.

The answer lies not in centralization, but *decentralizing* the service system, giving local providers explicit responsibilities, authority, and resources, and then holding them accountable.<sup>15</sup> This concept requires sophisticated local providers to coordinate a wide range of services. Such a system already exists in Arkansas in its

network of CMHC's. With additional guidance and support, they could function as the "hub" of a decentralized network of human services. Combined with case managers to ensure close relationships to state institutions, and monitored by a top level task force, this could result in a workable system responsive to local and state-wide needs. Best of all, it would stand a chance of really helping the people it serves.

(7) Research and evaluation. To obtain continued support, this mental health system must develop the capacity to evaluate current programs and plan for new ones. The Statewide Comprehensive Mental Health Services Plan<sup>1</sup> identified the initiation of *practical* research and evaluation as a priority area for new funding. With scarce resources, it is important to demonstrate program relevance, effectiveness, and efficiency. Developing the potential to perform an analysis of cost-effectiveness and cost-benefit is difficult but possible. Such data would enable leaders and involved citizens to make rational decisions about funding priorities and administrators to improve local programs.

In a related area, much needs to be done in basic and applied research into the etiology and treatment of emotional disorders. A coordinated effort between MHSD, the Department of Psychiatry at the University of Arkansas for Medical Sciences, and the Veterans Administration could result in research that is pertinent and relatively inexpensive.

By common sense, it is obvious that research is vitally important. Without it, we have no idea where we've been, where we are, or where we're going. Yet, obtaining funds is next to impossible. Public opinion is that research is a waste of money and a "rip-off." To be successful, the coordinated effort of the planning group must continue. By designing relevant research that has citizen support, legislators and other funding sources may be encouraged to provide money for pilot projects. It will then be dependent upon them to demonstrate their value.

(8) Training and continuing education. Dramatic changes occurring in this mental health system have significant implications for training and continuing education. Patients and programs are shifting from institutions to the community and new approaches to treatment are needed. Continuing education and primary training programs must keep abreast of these



changes. Academic programs that have traditionally used state and federal institutions as training sites are beginning to send their trainees into the community. This trend should be expanded but in a carefully controlled manner. Both institutional and community experiences should be major parts of every mental health training program. No matter what the facility, sound educational principles must be employed. A carefully designed curriculum, appropriate patient contact, and competent supervision are essential.

Federal funding will soon be obtained to design a comprehensive approach to manpower development<sup>16</sup> in Arkansas. This project will assess manpower needs from numerical and educational standpoints. The result will be a series of recommendations concerning professional training, continuing education, recruitment, and retention. An opportunity exists to design interventions that will have great impact on patient care. To do so will require cooperation between academic and service institutions. Efforts must be made to ensure that programs are designed that are academically sound and functionally relevant.

### Conclusion

The mental health system in Arkansas enters the 1980's with an impressive record of success. Dynamic leadership, political support, citizen involvement, dedicated staff, and a sound fiscal base have brought it this far. To continue this trend entails promoting a unified mental health system with a broad base of citizen involvement and control; providing stable funding for both state and community programs; responding to the needs of patients in a comprehensive manner; coordinating programs at the state and local levels; conducting relevant research to delineate the types of programs that are needed, effective and efficient; and educating mental health professionals with the appropriate knowledge, skills, and attitudes to help people with very special needs.

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# Extended-Wear Contact Lenses

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The capability of wearing a contact lens almost constantly, day and nighttime sleep, has been known since soft contact lenses first became available to the general public in 1972. The Federal Drug Administration, about nine years ago, declared that any new prosthetic device such as contact lenses would be under their control. Under that authority they forbid ophthalmologists to fit and prescribe extended-wear contact lenses except for therapeutic use with corneal disease. Many patients with such corneal diseases as bullous keratopathy, corneal ulceration, neuro-paralytic keratitis, etc., have worn these therapeutic lenses with considerable relief of symptoms for a number of years. The use of such lenses for cosmetic or optical benefit was prohibited by the F.D.A.

An important decision was announced in June, 1979, which holds promise of revolutionizing the wearing of contact lenses. The F.D.A. approved the use of extended-wear contact lenses in aphakic (cataract removed) patients. This opens the possibility that they may, in the future, approve extended-wear contact lenses for many or all patients who wear glasses.

This is not the liberation of all who put up with the problems of wearing spectacle glasses. Far from it, we are entering and learning about a new science, which may hold great benefits. The aphakic patient who wears spectacle glasses requires a thick, unsightly high plus lens which produces unbelievable distortions in vision. Yet the aphakic patient has put up with these distortions for many years. These spectacle glasses also produced about a 25% enlargement in image size. Therefore, a patient who had a cataract on one eye only with good vision in the other eye could not have the cataract removed and see with spectacle glasses. He would see a 25% larger image size in the aphakic eye compared to his other eye, which is an intolerable situation. With a contact lens, this difference in image size is reduced to 5% to 7% which can be tolerated. However, contact lenses, soft or hard, are difficult to insert and remove particularly in aphakic patients, many of whom are elderly with arthritis or other physical problems.

The extended-wear soft contact lens is inserted by the ophthalmologist and essentially never handled by the patient. The distortions and limited visual field produced by spectacle aphakic lenses is completely eliminated. The same benefits are accomplished by the insertion of an intra-ocular lens (IOL). However, certain complications are known to be increased with this modality. Some complications with the IOL requiring its removal necessitate another surgical intervention with the associated danger, morbidity and expense. If a complication develops with the extended-wear contact lens, it is a simple task to simply remove the lens. Also with the IOL, glasses must be worn to correct any refractive error for distance and near because calculation of the exact power needed with an IOL is not possible. With the extended-wear contact lens, glasses are not needed if one eye is set for distance and the other for near reading. Astigmatism, which is due to an aspheric cornea, is corrected by a hard contact lens which is spherical and, therefore, provides a new spherical surface to the cornea. Astigmatism is normally not corrected by a soft contact lens which molds itself to the aspheric cornea. However, toric soft contact lenses, which correct astigmatic refractive errors, have become available in the last year, even for aphakic patients.

The reason certain soft contact lenses can be worn constantly is due to their better oxygen transmission to the cornea. The cornea normally receives a certain proportion of its oxygen necessary for aerobic metabolism by absorption from the atmosphere. With a hard contact lens worn constantly, the cornea does not get sufficient oxygen and becomes edematous. This necessitates the "build up" time when first wearing hard contact lenses to "teach the cornea" to live with lesser oxygen and also requires removal each night. Violation of this principal while wearing hard contact lenses leads to corneal epithelial edema and a very painful experience rarely forgotten. Oxygen transport to the cornea with a soft contact lens mainly depends on its water content and, to some extent, its thickness. The higher the water content and the thinner the lens, the better the oxygen transport. Thus, not all soft contact lenses are suitable for continuous wear. Cur-

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rently, only the Cooper Laboratories "Permalens" (water content 70-75%) and the Hydrocurve II (water content approximately 45%) have been approved for extended wear by aphakic patients. These lenses are worn constantly with no "build up time" from the beginning. Some other soft contact lenses have been approved in patients with corneal diseases.

I have recently joined the ranks of aphakic patients and am currently wearing an extended-wear contact lens in one eye. I have also fitted about 25 aphakic patients with these lenses since they were approved. I have fitted extended-wear contact lenses for corneal diseases for many years. Therefore, I feel I speak with experience, personal and professional, about these lenses. Fitting these lenses is quite different from fitting ordinary soft lenses and I have learned a great deal by virtue of wearing one. I would like to discuss some of the features of this lens which I have learned.

(1) Vision — Most patients achieve good to excellent vision with these lenses. I currently enjoy better than 20/20 vision with my lens. Admittedly, vision in some patients is only 20/30 or so, some of which is due to other ocular diseases and some related to the contact lenses for reasons which are unknown. A poor fit, such as one lens I tried, caused annoying, varying vision with each blink.

(2) Ghost images — These are present with soft contact lenses, but rarely complained of by patients. I see a second picture every time I watch TV. Oncoming car headlights are quite bright and starlike. I have learned to ignore these images and only notice them when I look for them.

(3) Comfort — The lenses are extremely comfortable. Most of the time I am not aware that I have a lens on. A poorly fitting lens does produce an awareness and even inflammation and pain in extreme cases. Some atmospheric conditions, such as auto air conditioning blowing in your face, does cause the lens to dry out, producing the same sensation as a tear in your eye. This sensation also occurs at other times and may have a psychogenic basis. If I am busy at work or playing an intense game of bridge, I totally forget about the lens. Moisturizing drops (Adap-tette) are used anytime the lens feels uncomfortable, particularly on first awakening in the morning.

(4) Lens displacement and loss — In general,

the lens is quite stable and not easily displaced even with vigorous activities such as contact sports. Rubbing the eye is a "no-no" and can displace the lens. Rarely a lens is lost, usually at night, probably by inadvertent eye rubbing. Swimming, showers, etc., are possible as long as the eyes are kept closed.

(5) Durability — Some of the earlier soft contact lenses, such as the Bausch & Lomb lenses, had to be replaced as often as every four to six months due to the build up of protein and calcium lens deposits. The Hydrocurve II lenses have been available for about 2½ years and I have had to replace only two lenses, which had been worn for about two years. The lens can be torn with fingernails but this requires considerable effort.

(6) Lens care — Patients or relatives are instructed in insertion and removal of the lens, but in general this is not needed. After the initial fitting period, the average patient returns to his ophthalmologist every six months at which time the lens may be removed, cleaned and re-inserted if necessary. My profession requires extremely sharp vision and I often clean my lens every week or two.

(7) Complications — Reports on experimental trials with the extended-wear soft contact lenses have shown only few and rare complications. Neovascularization of the peripheral cornea has occasionally been seen but does not cause loss of vision. It is probably related to a lens that fits too tightly. It disappears if the lens is removed for a week or two or daily insertion and removal reverted to. Infections, corneal ulcers, are possible. I have personally treated four patients with pseudomonas corneal ulcers associated with wearing soft contact lenses. This is a very serious threat to vision. These were seen in patients on a daily insertion-removal schedule who admitted poor handling and sterilization of the lens. I suspect extended-wear will be safer due to less lens handling than in daily wear. I am cautious and instruct my patients to wash their hands before handling the lens. Otherwise, any chemicals, or even normal skin oils, may be transferred to the lens causing severe irritation on insertion. I have seen a peculiar thing in one patient. On several occasions, the lens became opaque after a few weeks wearing time. The company is currently investigating the etiology of this. There is one report of a lens turning black due to ab-

sorbed cosmetics used around the eyes. All soft contact wearers must be cautious around sprays in the air — hair spray, paint spray, deodorant spray, etc. It is possible these could be picked up and absorbed by the lens but I have never seen it. In the early years of soft contact lens wear, the use of most eyedrops was contra-indicated because of the possible absorption of their preservatives to toxic levels. This is probably an unjustified concern. My lens was inserted three days post-opt and I continued to use steroid and atropine drops for several weeks.

#### **Summary**

We may be on the brink of a new era for many or all spectacle glass wearers — the extended-wear contact lens. Although at present this is approved for only aphakic and corneal disease patients, I

am aware that many other soft lens patients wear their lenses all the time despite my warning that the F.D.A. has not approved it. I used to recommend and fit mostly hard contact lenses. The advantage of no lens handling, awakening each morning being able to see, and excellent comfort has altered my opinion. We still have some problems to solve in fitting these lenses. This is a problem that ophthalmologists will learn and solve with time and experience. These lenses certainly provide a significant advantage for most aphakic patients. As more of these lenses are worn by the general public, the IOL may well have seen its "heyday." Certainly with all aphakic patients wearing spectacle glasses, I am recommending, and hope you will too, the considerable benefits of the extended-wear contact lenses.





# ELECTROCARDIOGRAM

# OF THE MONTH



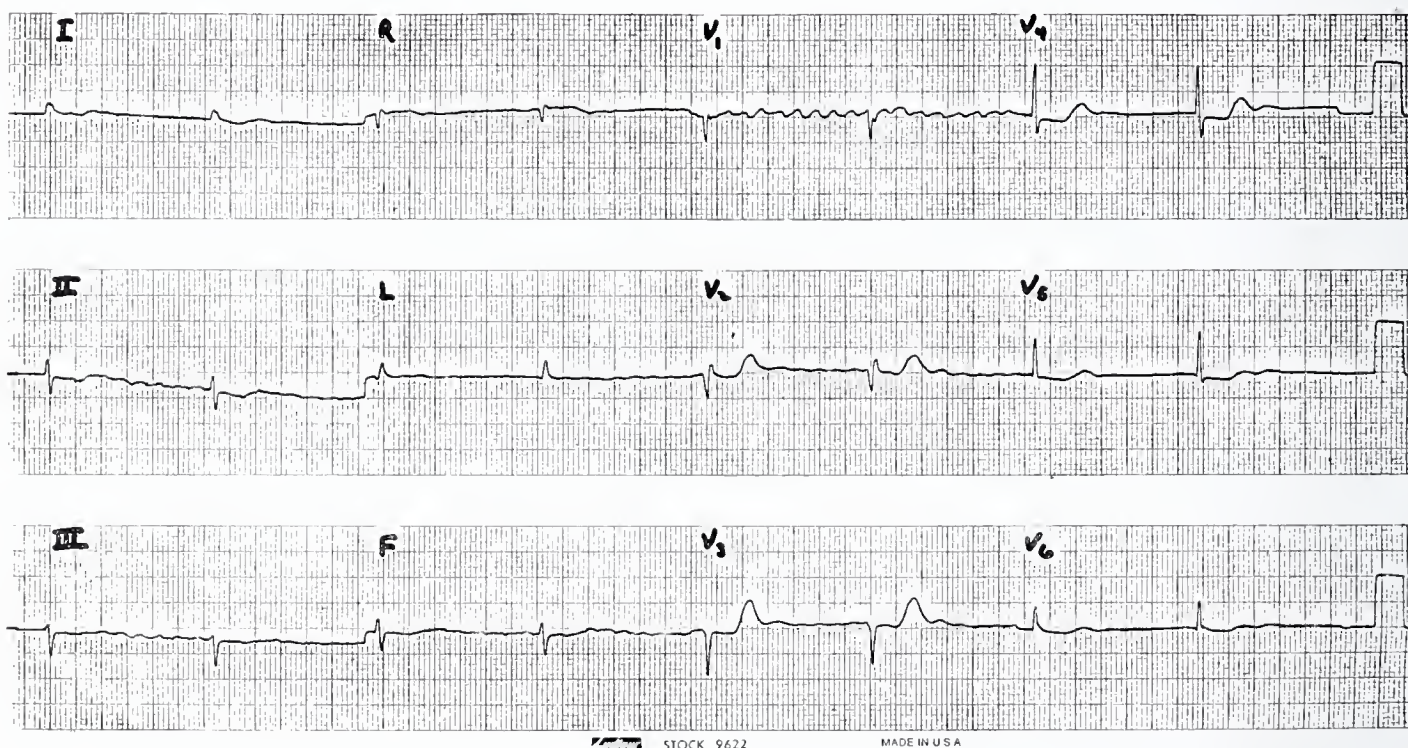
The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 337)

**HISTORY:** K. H. is a 60-year-old man who has angina and chronic congestive heart failure treated with digitalis. Recently, he has noted slowing of his pulse rate, visual disturbances, and an increase in his symptoms of congestive failure. His physical examination reveals a normotensive man with bradycardia and an  $S_3$  gallop. The patient's current electrocardiogram is shown below.

Which of the following remarks are most likely true and which are most likely false?

- A. The patient has experienced myocardial infarction in the past.
- B. The patient has atrial fibrillation.
- C. The patient has a junctional rhythm.
- D. He needs more digitalis acutely.



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## Unstable Ankle A Case Report

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B. J., a 30-year-old ex-basketball player, sought treatment for an acute left ankle injury on October 8, 1980. He related multiple ankle sprain injuries, especially the left, during the twelve-year career of high school, college, and professional basketball.

The latest symptoms were confined to the medial aspect of the left ankle, where the patient complained of pain and marked tenderness. No pain, tenderness or swelling were present on the lateral ankle. The patient was noted to walk with a marked antalgic gait, limping on an inverted foot.

Because of the history of multiple injuries and signs and symptoms indicative of deltoid ligament tear (medial ankle ligaments), it was elected to advise an arthrogram study of this ankle. The patient agreed and the test was carried out under sterile conditions and local anesthesia. Ten cc.'s of Renografin-60 was injected into the antero-medial corner of the ankle joint. An oblique X-ray was obtained, which is depicted in Figure 1. In this drawing, the bones of the ankle are represented by shading and the clear areas are the areas covered by the radiopaque dye.

It was expected that leakage of dye would be seen at the medial malleolus (MM in Fig. 1). This was not the case; instead, the dye was well contained in the ankle joint medially, but was seen to leak from the joint and surround the lateral malleolus (LM in Fig. 1) in multiple areas. It then became evident that this patient had such severe damage and instability to the lateral ligaments of the ankle joint, that no response to injury (tearing and bleeding) was possible. It is

evident from proper interpretation of the arthrogram X-ray that the anterior talo-fibular ligament and the fibulo-calcaneal ligament are completely nonfunctional.

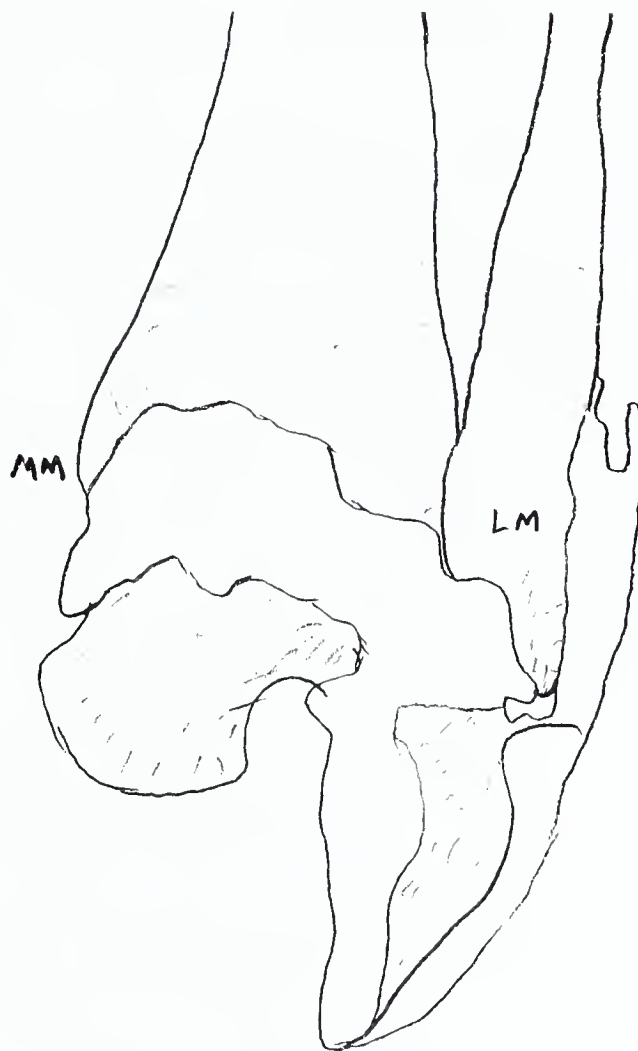


FIG I

ARTHOGRAM ANKLE

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Treatment of interval casting and future surgery were advised.

It should be pointed out that a tear of the deltoid ligament of the ankle, the structure that is responsible for medial ankle stability, requires emergency surgical repair; but lateral ligament tears can be adequately treated (especially in chronic cases) with delayed surgical treatment.

The place of the arthrogram in assessment of ankle injuries depends on a number of factors. First of all, the arthrogram must be performed within one week of the injury to be considered reliable.<sup>2</sup> After this period, blood coagulation and fibrous tissue can give a false negative test. However, the arthrogram, done under local anesthesia, can be done earlier than stress testing, without pain to the patient. The examiner should also keep in mind that unusual communications do sometimes exist between the ankle joint and the sheaths of the peroneal tendons and differentiate these from tears in interpreting the X-rays.<sup>6,7</sup>

I tend to agree with Dr. Marcus Stewart of Campbell's Clinic in regard to use of the arthrogram.<sup>1</sup> He states that arthroscopy is valuable in cases of suspected medial ankle ligament tears and in cases of suspected diastasis of the distal tibio-fibular joint. He also feels that arthro-

graphy, correlated with stress X-rays, will document ligamentous instability and provide a guideline for planning surgical treatment and making prognostic estimations.

In conclusion, ankle joint arthrography is not indicated in all acute injuries, but is of definite value in assessing the extent of injury and planning treatment in those cases of multiple ankle injuries that plague and disable patients.

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# Pediatric Review:

## Cow's Milk Intolerance

Helen L. Butler, M.D.\*

Cow's milk intolerance is multifaceted disease representing adverse systemic or local gastrointestinal reactions to cow's milk protein. Although numerous immunological and morphologic studies have been undertaken, the pathogenesis of the disease is still not well delineated. This article will review some of the known immunologic data, but primarily focus on diagnosis and management of this disorder.

### Incidence and Clinical Features

The incidence of cow's milk allergy varies between 0.1 and 8%<sup>1,2</sup> of the population with the disparity probably reflecting differing criteria for diagnosis. Since there is a spectrum of disease, of which many of the symptoms are non-specific, identification of children with cow's milk allergy can be difficult and overdiagnosis is common. The intolerance is more common in infants with systemic signs of allergy such as eczema or wheezing and siblings of milk allergic infants have a 50% chance of being intolerant of cow's milk.<sup>3,4</sup>

Cow's milk intolerance is primarily a disease of infancy usually presenting within the first three months of life and the great majority of infants will become symptomatic within the first two months. Some newborns may be symptomatic upon their first exposure to milk suggesting in utero sensitization.<sup>5,6</sup> Infants have also been symptomatic while breast feeding when the mother consumed large amounts of milk.<sup>7</sup> Almost all protein-intolerant children are able to tolerate the protein by two years of age.

Several clinical syndromes of milk intolerance have been described. Milk-induced colitis is frequently seen in infants less than one year of age presenting with diarrhea associated with blood, polymorphonuclear leukocytes (PMNs) and eosinophils in the stool.<sup>8-10</sup> Proctosigmoidoscopic exam of these infants reveals increased friability of the mucosa and a loss of the vascular pattern. The rectal biopsy varies from infiltration of PMNs into the lamina propria to crypt abscesses. Sugar malabsorption may or may not be associated with the colitis.

A second presentation may be seen in older infants and children. An infant with protein-losing enteropathy due to milk hypersensitivity can have severe symptoms including edema secondary to hypoalbuminemia, iron deficiency anemia due to fecal blood loss, low immunoglobulins and failure to thrive.<sup>11</sup> The lamina propria of the small bowel is infiltrated with eosinophils. Sugar and fat absorption are usually normal. Many of these children have extraintestinal signs of allergy and exhibit peripheral eosinophilia. This presentation, which is far less common, is similar to the eosinophilic gastroenteritis seen in adults.

A third presentation is a malabsorption syndrome due to small bowel injury resulting in fat and sugar malabsorption.<sup>12-14</sup> The small bowel mucosa is flattened and resembles celiac sprue, but the infants are not sensitive to gluten. These infants have watery diarrhea, failure to thrive and vomiting.

Finally, chronic blood loss into the gastrointestinal tract with resulting iron deficiency anemia is well known.<sup>15</sup> The anemia can be quite severe, requiring transfusion. Whether this is truly an allergic response or a direct toxic effect of milk on the bowel mucosa is unclear. Infants with anemia due to milk generally ingest greater than one quart of milk a day and a correlation between the quantity of milk ingested and the amount of fecal blood loss has been found.

These four entities seem quite clear-cut. Unfortunately, many infants present with overlapping symptoms and can appear confusing to the clinician and difficult to diagnose. In addition to the above mentioned syndromes, infants can present with systemic signs of allergy such as rhinitis, eczema and wheezing which may be difficult to attribute directly to milk ingestion.<sup>7,16</sup> Patients who are intolerant of cow's milk may also be intolerant of other food proteins including soy protein which is frequently used as a substitute in a child with suspected cow's milk intolerance.<sup>7,16-18</sup> Indeed, soy protein has been found to be no less antigenic than the protein in cow's milk. Goat's milk is also not a suitable sub-

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stitute as the protein in goat's milk cross-reacts with cow's milk protein.<sup>19</sup>

### Pathogenesis and Immunological Studies

As mentioned, milk intolerance is an entity seen in infancy with resolution by age two years. Newborns and young infants are thought to have increased permeability of their bowel mucosa thereby allowing absorption of larger and more antigenic proteins. This is likely due in part to the deficiency of secretory IgA of the newborn which corrects with increasing age.<sup>20</sup> During acute gastroenteritis, normal protective mechanisms in the bowel may be altered and also allow larger proteins through the mucosa. This suggests the mechanism for the increased incidence of milk protein intolerance observed in previously non-sensitized infants following gastroenteritis.

Since there are several different syndromes described for milk allergy, they are most likely not all mediated by the same immunologic mechanism. Ninety-five percent of normal infants fed cow's milk will have antibodies to cow's milk protein demonstrating an early rise in serum IgG followed by an increase in IgA a few months later.<sup>21</sup> Milk-specific IgM, A, G, and E antibodies have been found in milk-intolerant and milk-tolerant infants but do not fall into any distinguishable pattern to help separate the two groups.<sup>22,23</sup> Even biopsies of the bowel mucosa fail to clearly delineate the etiologic mechanisms of the disease but many studies are hampered by including patients with overlapping milk allergy syndromes.<sup>24</sup> Complement activation may be involved, but reports are conflicting and complement consumption difficult to document.<sup>25</sup> In vitro lymphocyte blastogenic responses to milk proteins have been demonstrated and could be indicative of lymphocytic sensitization.<sup>26</sup> A neutrophil chemotactic defect has also been shown which may be a maturational defect or immunologically mediated.<sup>27</sup>

### Diagnosis and Management

The diagnosis of cow's milk intolerance may be difficult but with pertinent historical, clinical and laboratory data, the diagnosis can be facilitated. Infants may display symptoms which are easily correlated with the ingestion of cow's milk such as the child who is weaned from the breast onto cow's milk and shortly afterwards develops bloody diarrhea. Other causes of blood and white blood cells in the stools should be investigated

such as bacterial infections. *Shigella*, *Salmonella* and *Campylobacter* can cause blood and WBC in the stools. Amebiasis is also a cause of enteric blood loss and O&P should be performed.

Although primary lactase deficiency is quite rare, secondary lactase deficiency is not uncommon following acute gastroenteritis. This can be seen by itself with no concomitant protein intolerance. An infant with watery diarrhea without blood and white blood cells in the stool is likely to have lactase deficiency. When lactose is removed from the diet, the infant's diarrhea resolves rapidly but the enzyme deficiency can persist for 4-6 weeks. This time interval can be very variable and good studies to document the return of normal lactase levels in the bowel have yet to be done.

A typical picture of milk intolerance is that of a baby less than three months of age with diarrhea and blood and white cells in the stools, usually with sugar malabsorption. However, the differential diagnosis of young infants with fat malabsorption or protein-losing enteropathy must also include milk intolerance. Certainly a baby with colitis with no enteric pathogen isolated should be looked at closely for milk allergy. In addition, occasionally an infant will have primarily systemic signs with little or no gastrointestinal symptoms. Vomiting is commonly seen in association with the described clinical syndromes of milk intolerance and rarely may be seen by itself as a symptom of milk allergy.

Stools should be checked for blood, white blood cells and sugar in any child suspected of milk intolerance. Stool smears should be stained for white blood cells (mainly polymorphonuclear cells and eosinophils) with Wrights stain, Hansel's stain (the stain used for nasal smears) or methylene blue (this will only identify PMNs). Clinitest of the stool to detect sugar malabsorption is readily obtained. The method is identical to urine testing for sugar with  $>0.5\%$  being abnormal. Lactose is the sugar in cow's milk formulas and sucrose is in Isomil. ProSobee now contains corn syrup solids and malabsorption of this starch product can be estimated by the Clinitest. Since sucrose is not a reducing sugar, sucrose malabsorption will be underestimated in the patient on Isomil unless the Clinitest is performed after acid hydrolysis of the stool water. This is done by placing five drops of stool in a test tube, adding ten drops of 0.1N HCl and intermittently

heating to boil the solution for one minute. The standard Clinitest is then performed on the sample.

Many methods to diagnose milk intolerance have been described which all basically rely on the appearance of symptoms correlated with the ingestion of a trial feeding of milk. The original challenge was described by Goldman, et al, in 1963.<sup>16</sup> It consists of:

1. Symptoms must subside after milk elimination.
2. They must recur within 48 hours after a trial feeding of milk.
3. Three such challenges must be positive and have similar onset, duration and clinical features.
4. Symptoms must subside after each challenge reaction.

Most clinicians find the required three trials to be time-consuming and possibly hazardous to the patient and this challenge has generally been replaced by others.

The milk challenge as described by Powell<sup>28</sup> is limited to patients with enterocolitis that are less than one year of age. The infant is placed on Nutramigen and allowed to grow and recover from the bowel insult. Following one month of normal growth, the infant is hospitalized and challenged. After establishing that a baseline stool contains no blood or leukocytes, 100 cc of cow's milk formula are fed to the infant after an eight hour fast. (0.6 grams/kg protein is now used as the test dose.) Medical observation is maintained during the first two hours post-challenge to monitor for signs of anaphylaxis and severe reactions with marked fluid losses. If no vomiting or signs of allergy are observed within four hours, the child is restarted on Nutramigen. Each stool passed for the next 24 hours is evaluated for the presence of blood (by guaiac) and leukocytes (stool smear stained with Hansel's stain). If fecal blood or leukocytes were not present in the baseline stool but appear within 24 hours, the challenge is considered positive. If no symptoms occur and stool studies are negative, the patient is begun on cow's milk feedings the following morning. The patient is monitored for chronic tolerance for one week with no other food added and symptoms and weight gain carefully recorded. In infants less than one year of age, a negative acute challenge usually predicts chronic tolerance.

The third challenge is the method proposed by Ament<sup>9</sup> and is used at the Arkansas Children's

Hospital. It involves giving increasing volumes of milk at hourly intervals and collecting and checking all stools for volume, pH, reducing substances, blood and white blood cells by the following schedule:

HOUR	VOLUME OF TEST FORMULA
1	1 cc
2	3
3	5
4	10
5	15
6	30
7	60
8	90
9	120
10	ad lib, change to every 3-4 hour feedings

Stool volumes  $>20$  grams/kg/day (not to exceed 200 grams), reducing substances  $>0.5\%$ , or the presence of blood and white blood cells in the stool indicative a positive reaction to milk. The infants are observed for five days to watch for a delayed reaction.

One difficulty in the challenge comes with trying to differentiate between sugar malabsorption secondary to protein intolerance and malabsorption secondary to only lactase deficiency. To eliminate this possibility, prior to the Ament or Powell challenge a lactose tolerance test might be performed. This is done by fasting the infant 6 hours and giving 2 grams/kg orally of lactose in a 10 or 20% solution. Patients are then monitored for the next 18-24 hours for excess stooling and the presence of lactose malabsorption as detected by Clinitest. There is no real need to do blood glucose determinations as is done during a glucose tolerance test as recent reports fail to show a correlation between clinical lactose intolerance (such as the development of watery diarrhea with  $>0.5\%$  reducing substances present) and a rise in the blood glucose.<sup>29</sup> The child is able to resume formula feeding during the observation time providing the formula does not contain lactose.

The prudent physician will realize that all of these challenges require hospitalization, but none of the challenges are too complicated to be carried out at the community level.

The treatment first consists of proper diagnosis. Because a great number of children will be in-



tolerant to both milk and soy formulas, many pediatric gastroenterologists will place a child on a more elemental diet pending the results of the challenge or after an infant fails a challenge. These formulas include Nutramigen, Pregestimil and Vivonex, all of which contain hydrolyzed protein or amino acid mixtures. Some very sensitive infants will react to the small amount of unhydrolyzed casein in Nutramigen, yet most do quite well. Also some infants are not able to tolerate the increased osmolarity of Vivonex which is partly related to the fact that it is 30 calories per ounce instead of the usual 20. Flavor packets are available for Vivonex but should not be used because of the introduction of additional antigens. Infants are left on the formula until over a year of age when thought must be given to determine if a child is again able to tolerate the protein. The same procedure is followed for a rechallenge except the lactose tolerance test is not duplicated. The results of the rechallenge at an age greater than one year may not yield as clear cut results as the initial challenge. Care must be given to not challenge a child with eczema or other severe allergic symptoms too soon as their intolerance may be more prolonged than a child without systemic signs of allergy.

### Summary

Milk intolerance is a disease of infancy which presents within the first three months of life and usually resolves by age two. Symptoms include diarrhea, vomiting, failure to thrive, eczema, wheezing, and malnutrition. Patients may exhibit protein-losing enteropathy, fat malabsorption, sugar malabsorption, anemia or enterocolitis.

Laboratory data include elevated white blood counts and blood and white cells in the stools. Diagnosis is made by the milk challenge after other etiologies have been excluded and patients are placed on a non-antigenic formula until they demonstrate the ability to tolerate the protein.

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## EDITORIAL

# Chemistry of the Nervous System

Alfred Kahn, Jr., M.D.

The human body is a water-tight bag of chemicals with a few ridge poles to give it shape. The discovery of new chemical reactions seems to parallel the development of more sophisticated investigative methods. The pace of new chemical and endocrine discoveries seems to be accelerating — and for this reason, good review articles are of special help to the general medical public.

Sinding and Robinson have published "A Review of Neurophysins" in *Metabolism* (Vol. 26, p. 1355, Dec. 1977). They state that neurosecretory cells were discovered in the hypothalamus 50 years ago, and later throughout neurohypophyseal tract. Van Slyke is said to have found a protein in posterior pituitary that seemingly related to this secretory activity. It was fractionated into three parts: the oxytocic factor, the pressor factor, and a seemingly inert factor now known as neurophysin. Later, studies have shown that there are at least two neurophysins, and perhaps there are more. Neurophysin I seems to relate to the oxytocin factor and neurophysin II seems to relate to the vasopressin factor. Sinding and Robinson feel that both neurophysins and both the oxy-

tocic and the vasopressin factor are made in the supra optic and paraventricular nuclei and are then transported to the posterior lobe of the pituitary gland. Neurophysins may also be transported to other areas from their source of origin. Neurophysins have been found in the zona externa, the floor of the third ventricle, etc. It is possible that the hormones and neurophysins from the hypothalamus may have a role in the anterior pituitary; corticotrophin releasing hormone may be released or in some way relate to neurophysin. Vasopressin is known to release ACTH. It appears that the neurophysical cells, as noted above, make a protein; this protein is later split into the active oxytocic or vasopressin hormone plus a neurophysin; in short, the neurophysin and a hormone stem from a precursor or protein; these substances are transported down nerve axons to their destination in the posterior pituitary and elsewhere. The secretion of neurophysin has been studied intensively. Nicotine seems to stimulate the release of at least one neurophysin; tilting and surgical stress have a similar effect. The proof of the cause of the re-



lease of the other neurophysin is still open to debate. Sinding and Robinson state that no major biologic function has been found for neurophysins; they suggest that neurophysins may be carriers for the posterior pituitary hormones. They may be a fragment of a precursor hormone; neurophysin may help bind posterior pituitary hormones in the peripheral tissues.

The question of each mental disease reflecting different biologic and chemical patterns is being studied intensively. There are many who feel the serious mental disorders are chemical disturbances—rather than an unsatisfactory environment, failure of adaptation, etc. Potkins, Cannon, Murphy, and Wyatt have tried to determine if paranoid schizophrenics are different from other schizophrenics (*New England Journal of Medicine*, Vol. 298, p. 62, Jan. 12, 1978). They focused on monoamine oxidase which is said to be part of the chain that degrades certain amines which affect the behavior of humans. Monoamine oxidase can be easily measured in platelets. Some research indicated that there might be more than one type of schizophrenia. Potkin, et al, did a prospective study on 42 patients with schizophrenia. All the cases were chronic and almost all had a gradual onset. Other studies showed that neuroleptic drugs did not affect the monoamine oxidase in platelets. When the monoamine oxidase was measured, it was found that the monoamine oxidase of paranoid schizophrenics was lower than other schizophrenics; schizophrenics as a group had lower monoamine oxidase than normals. The authors also suggest that certain normal people with low monoamine oxidase activity may have a group of traits similar to the paranoid schizophrenic. Animal studies are said to indicate no change in behavior patterns when given drugs that reduce monoamine oxidase but the monoamine oxidase inhibitors plus drugs that produce abnormal behavior induce behavioral disturbances and stereotypy.

"Corticotropin-like Peptides In Central Nerves and In Endocrine Cells of Gut and Pancreas" is the title of a preliminary communication published by L. I. Larsson in *Lancet*, Vol. II for 1977, p. 132, Dec. 24 and 31, 1977. The author states that peptides with ACTH-like activity are found not alone in the pituitary but also in the brain; he further relates that ACTH and the fractions derived from it have a bearing on learning, memory, behavior—and they also bind to brain opi-

ates receptors. The author examined human tissue from surgical specimens and animal tissue. The tissues were tested for ACTH by an immunocytochemical method. He found a "network of immunoreactive nerves" in two hypothalamic nuclei and the median eminence. He found some activity in other areas of the brain. Only occasional immunoreactive fibers were found in the spinal cord and ganglia. It is of further interest that similar reactive cells were found in the stomach, duodenum, and pancreas. Larsson studies indicate that ACTH and/or ACTH-like peptides can be found in many areas in the body. One ACTH-like substance is called corticotropin-like intermediate peptide. Larsson feels that the widespread presence of ACTH and related peptides in various organs explains the cushing-like syndrome sometimes seen in tumors of these organs.



**MARCH 2-6**

"The Impact on Time on the Diagnosis and Treatment of Cancer: 1936-1981." Seventieth Annual Meeting of the United States-Canadian Division of the International Academy of Pathology. Palmer House, Chicago. For further information, contact Dr. Nathan Kaufman, Secretary-Treasurer, 1003 Chafee Avenue, Augusta, Georgia 30904, phone (404) 724-2973.

**MARCH 12-14**

The University of Mississippi Postgraduate Surgical Forum VIII. Sessions will be presented on trauma, endocrine and breast surgery, general surgery, vascular surgery and gastrointestinal-biliary surgery. Holiday Inn Downtown, Jackson, Mississippi. Fee \$225. Advance registration required. Seventeen credit hours Category I, Physician's Recognition Award of AMA.

For further information, contact Continuing Education, Department A, University of Mississippi Medical Center, 2500 North State Street, Jackson, Mississippi 39216, phone (610) 987-4914.

## "From Other Years"

*Arkansas Medical Monthly*

Vol. 1 No. 2 May, 1880 p. 89

### THE ARKANSAS STATE MEDICAL SOCIETY

The above medical society has just closed its Fifth Annual Session in the city, bringing together as participants in its deliberations the largest number of medical gentlemen ever before assembled in this state. The meeting was conducted with harmony, and its proceedings fraught with interest from beginning to end. The committee of arrangements who provided so handsomely for the entertainment of the members are to be congratulated upon the success attending their efforts; and the profession in general should feel proud of the occasion which has marked an era of such universal harmony in our ranks. We, as a reconstructed member, were pleased with the hearty spirit of welcome with which we were greeted, on joining our destiny with this association, and in speaking our sentiments, we but duplicate the expression of all the new members, whose presence aided to swell this body into its august proportions. No matter now whether it be the return of the prodigal son, or the old man himself come home, the family are again united,

and the 'fatted calf' has been killed and eaten, and a new covenant is made.

From the University of Arkansas for Medical Sciences Library, History of Medicine, Archives Division.

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*Arkansas Medical Monthly*

Vol. 1 No. 2 May, 1880 p. 91

### PHYSICIANS IN ARKANSAS

In Ashley County, 12; Baxter, 18; Bradley, 22; Boone, 18; Benton, 21; Chicot, 8; Crittenden, 13; Calhoun, 9; Columbia, 14; Crawford, 20; Clay, 17; Craighead, 15; Carroll, 10; Clark, 31; Dorsey, 15; Desha, 7; Drew, 23; Dallas, 13; Franklin, 31; Faulkner, 14; Fulton, 6; Grant, 9; Greene, 16; Garland, 40; Hempstead, 35; Howard, 12; Hot Spring, 15; Independence, 24; Izard, 21; Jackson, 24; Johnson, 18; Lee, 18; Lincoln, 15; Lafayette, 12; Lonoke, 12; Little River, 12; Lawrence, 12; Mississippi, 18; Marion, 15; Monroe, 18; Madison, 16; Montgomery, 17; Miller, 12; Newton, 11; Ouachita, 20; Prairie, 17; Perry, 10; Pulaski, 65; Pike, 16; Phillips, 20; Poinsett, 7; Randolph, 27; Stone, 13; Searcy, 12; Scott, 20; Saline, 10; Union, 25; Van Buren, 19; Woodruff, 17; White, 35. Total, 1,079.

Subsequent returns indicate about 1,500 in the entire state.

From the University of Arkansas for Medical Sciences Library, History of Medicine, Archives Division.



## MEDICINE IN THE NEWS



### THE MONTH IN WASHINGTON

All has not been completely quiet on Capitol Hill during the election recess. During the six-week interval, congressional staffs have been meeting in an effort to seek compromise solutions that can be worked out when their law-maker bosses return. Major spadework is taking place on the Health Manpower bills approved by the House and Senate in versions that differ widely. Both bills reduce capitation aid to medical schools, but

in different fashion. Members of the Senate Health and Human Resources and House Commerce Committees would like to send this bill out of Congress this year in order to avoid taking up the complicated issue in the next Congress.

Speculation on what might be accomplished by the "lame duck" session includes:

- A try will be made to secure agreement on the controversial biomedical research legislation that for the first time gives Congress clear au-



thorizing power over the National Institutes of Health.

● The Administration's embattled Child Health Assurance program, expanding medicaid coverage for the poor children and pregnant women, will probably be acted on early in the post-election session in the Senate. Anti-abortion amendments threaten House-Senate agreement, but there is a chance.

● The bill providing privacy protection for patients' medical records in hospitals probably will have to be carried over into the next session.

\* \* \* \*

The Supreme Court has delivered the latest defeat to the controversial drug laetrile as an anti-cancer product by refusing to interfere with a lower court ruling that the drug cannot be "grandfathered" into general use as a cancer treatment.

The Justices left standing a Federal appeal court ruling that laetrile did not qualify for an exemption under 1962 Drug Act Amendments.

The high court also left intact the Appeals Court ruling that the privacy rights of cancer patients to choose their treatment were not violated by denial of laetrile.

In June 1979, the Supreme Court upheld the Federal government's authority to ban distribution of laetrile, reversing a lower-court decision allowing terminally-ill cancer patients to obtain the substance.

Food and Drug Administration officials say laetrile has no value as a cancer cure, but the National Cancer Institute last July began clinical testing of it on patients. The results are not expected until next year.

Twenty-one states have legalized the product.

\* \* \* \*

The Food and Drug Administration has proposed that a label on tampons warn women that tampons have been linked to the toxic shock syndrome.

Major manufacturers of tampons have indicated they will voluntarily put warning labels on their products. The FDA wants to make the rule mandatory.

The FDA said all brands of tampons have been associated with the disease.

The proposed label would say:

"WARNING: Tampons have been associated with toxic shock syndrome, a rare disease that can be fatal.

"You can almost entirely avoid the risk of getting this disease by not using tampons. You can reduce the risk by using tampons on and off during your period.

"If you have a fever of 102 degrees or more, and vomit or get diarrhea during your period, remove the tampon at once and see a doctor right away."

\* \* \* \*

President Carter has signed into law legislation allowing the Veterans Administration to keep confidential certain VA hospital peer review files in the face of freedom information requests for information. The provision was sponsored by Sen. Herman Talmadge (D., GA) when a VA hospital, faced with such a request, argued that full disclosure could jeopardize the entire peer review process.

\* \* \* \*

The Health and Human Service Department plans to fund demonstration projects to test the effectiveness of treating alcoholism under Medicare and Medicaid in residencies and outpatient facilities.

\* \* \* \*

The Food and Drug Administration has asked the food industry to study the safety of caffeine as an added ingredient in soft drinks and other products. The Agency has proposed that caffeine-free cola drinks still be called "colas." Current regulations require that caffeine be present in non-artificially sweetened drinks before they can be called colas. The Agency has said pregnant women should avoid, or only use sparingly, coffee, tea, and other caffeine-containing foods and beverages.

Under the recent proposal caffeine would be removed from the list of substances which the FDA regards as "generally recognized as safe." But its continued use as a food additive would be permitted while studies are underway.

In addition the food industry's continued use of caffeine as an additive would be conditional on its funding of studies on its impact on children and the unborn. The coffee and soft drink industries have indicated they will support such studies, the Agency said.

\* \* \* \*

A new Medicare payment method for kidney dialysis has been proposed by the government.

Under the plan, Medicare would set national rates in advance, according to the type and loca-

tion of the facility, then pay 80 percent of that rate. Facilities furnishing treatments more economically than the specified rate could keep the difference between their actual cost and the national rate.

The method would apply to outpatient dialysis in a hospital or freestanding facility, and to programs that train patients to dialyze themselves at home.

Medicare, under Part B, now pays 80 percent of the average cost of outpatient treatment in a hospital and 80 percent of reasonable charges for independent facilities up to a limit of \$138 per treatment, unless an exception is granted.

"Although our kidney program has been successful in protecting renal disease patients against the catastrophic costs of needed care, expenditures have skyrocketed from some \$160 million in 1974 to about \$850 million in 1979," said Howard Newman, head of the Health Care Financing Administration. "We feel that the method of reimbursement we are proposing would slow the increase in costs by promoting more efficient and cost-effective delivery of services through financial incentives."

\* \* \* \*

The Health and Human Services Department has awarded \$12 million to 27 states to test new systems for providing long term health and social services to the elderly and disabled.

The awards are the first under a new, five-year, \$150 million National Long Term Care Demonstration Program, developed by HHS at the recommendation of a Task Force established last December.

Twelve states received awards totaling \$10.4 million to establish Long Term Care Demonstration Projects in local communities in which public and private agencies will join together to provide comprehensive long term services, tailored specifically to the needs of the individual. Each project will assess the client's needs, develop a plan for care, arrange for delivery of the proper mix of services and follow up to assure that the services were provided and were effective.

Fifteen states received awards totaling \$1.5 million to plan the best use of their existing long term care resources on a statewide basis.



## PSRO DESIGNATION

The Arkansas PSRO has received the following notification of its designation as a fully qualified review organization:

"A. S. Koenig, M.D., President  
Arkansas Foundation for Medical Care  
P. O. Box 1512  
220 North 12th Street  
Fort Smith, Arkansas 72902

Dear Dr. Koenig:

This is to officially notify you that the Arkansas Foundation for Medical Care has satisfactorily completed its conditional period of operations and is designated as a fully qualified Professional Standards Review Organization (PSRO), effective January 1, 1981. Fully designated PSROs are governed by the same rules and regulations as conditional PSROs with the exception of the specific provisions of Title 42 of the Code of Federal Regulations, Section 462.11(e)(f).

I am pleased to recognize the performance of the Arkansas Foundation for Medical Care in this way and offer you my best wishes for your continued successful performance.

Sincerely yours,

/s/ Edward L. Kelly

Edward L. Kelly

Acting Director"

Health Standards and Quality Bureau  
Health Care Financing Administration  
Department of Health and Human Services  
Baltimore, Maryland 21207

### ANSWER—Electrocardiogram of the Month

**DISCUSSION:** The ECG shows atrial fibrillation with regularization of the QRS complexes at a rate of 47 per minute. The QRS complexes are less than 0.10 seconds in duration. This degree of slowing with regularization of ventricular response in the presence of atrial fibrillation suggests the assumption of a junctional pacemaker which in turn suggests digitoxin excess, especially in this patient with symptoms commonly seen in digitoxin intoxication. Also, the presence of QS complexes in V<sub>1</sub>-V<sub>3</sub> is consistent with post anteroseptal infarction. So, choices A, B, and C are true while D is false.



# REPORT ON WINTER MEETING OF THE ARKANSAS MEDICAL SOCIETY

The winter meeting of the Arkansas Medical Society was held November 16, 1980, at the Sheraton Inn, Fort Smith.

The headquarters office at 214 North 12th Street was open from 8:30 a.m. to 10:30 a.m. so that members could visit the Society quarters while in Fort Smith.

Committee meetings were held at the Sheraton between 8:00 a.m. and 10:00 a.m. Holding meetings were the Committee on Medical Legislation, the Constitutional Revisions Committee, the Public Relations Committee, the Committee on Aging, the Traffic Safety Committee, the Political Action Committee, and the Ad Hoc Committee on Society Policy Statements.

A business session of the Council of the Society was held at 10:00 a.m. Minutes of that meeting follow.

A program on stained glass was presented at 10:00 a.m. Mrs. Kemal Kutait of Fort Smith served as M.C. for the program. Dr. Paulo Dufour, Manager and Artist-in-Residence at Merry-Go-Round Glass, presented the program on production of stained glass. Merry-Go-Round Glass is owned by Dr. and Mrs. Steven K. Wilson of Fort Smith.

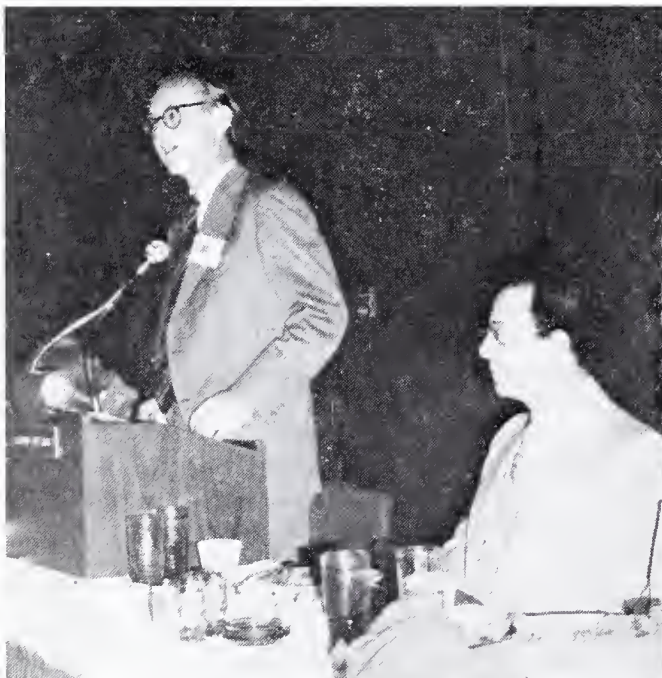
Kemal Kutait of Fort Smith, president of the State Society, presided at a luncheon meeting for all members of the Society and Auxiliary. Harry Ward, Chancellor of the University of Arkansas

for Medical Sciences, spoke at the luncheon. He discussed medical education, the supply of physicians, and future plans for the College of Medicine.

During the luncheon, Thomas A. Bruce, Dean of the College of Medicine, received a plaque of appreciation from the American Pathology Foundation. The presentation was made by A. S. Koenig, Jr., of Fort Smith.



James Weber, Chairman of the Committee on Medical Legislation, addressed the House of Delegates on legislative proposals.



Harry Ward, Chancellor of the University of Arkansas for Medical Sciences, was speaker at the luncheon during the Society's winter meeting. President Kemal Kutait (right) presided at the luncheon meeting.



Thomas Bruce, Dean of the University of Arkansas College of Medicine, received a plaque of appreciation from the American Pathology Foundation. The award was presented by A. S. Koenig, Jr. Dr. Bruce was recognized by the Foundation for his work in support of the preservation of the private practice of pathology.



Following luncheon, a meeting of the House of Delegates was held with Speaker Anail Chudy and Vice Speaker Pat Phillips presiding. Minutes of that meeting follow.

\* \* \* \*

# **COUNCIL MINUTES** **November 16, 1980**

The Council of the Arkansas Medical Society met at 10:00 a.m. on Sunday, November 16, at the Sheraton Inn, in Fort Smith. Council members present were: Burge, Smith, Kutait, Martin, Shuffield, Duzan, Osborne, Crow, J. Bell, P. Bell, Hestir, Irwin, Warren, Duncan, Mann, Jones, Jouett, Henry, Williams, Lilly, Chudy, Phillips, Kolb, Verser, Fowler, Applegate, Norton, Henry, and Koenig. Others present were George Mitchell, Bob Benafield, Tom Bruce, James Weber, Milton Deneke, Richard Pearson, James Kolb, James Maupin, John Guenther, Jim Lytle, Harold Purdy, Bascom P. Raney, Sam Koenig, Larry Lawson, Wayne Elliott, Raymond Biondo, Carl Williams, J. F. Kelsey, Mr. Mitchell, Mr. LaMastus, C. C. Long, and Miss Richmond.

Chairman Burge introduced Mrs. Larry Lawson, Auxiliary AMA-ERF Chairman, who encouraged members of the Council to participate in the AMA-ERF Sharing Card project.

The Council transacted business as follows:

1. Upon motion of Jouett, approved actions of the Executive Committee in meetings held on September 24th and October 30th.

2. Kemal Kutait, chairman of the Reorganizational Study Committee, presented a report from his committee. Upon motion of Lilly, the Council voted on each recommendation from the committee.

Recommendation No. 1: The immediate past president of the Society be made a voting member of the Executive Committee of the Council.

By motion of Lilly and Warren, the recommendation was referred to the Constitutional Revisions Committee.

Recommendation No. 2: Delegates be elected by the county society to serve for the calendar year based on the State Society membership of the component society at the end of the prior year.

By motion of Jones and Warren, the recommendation was referred to the Constitutional Revisions Committee.

Recommendation No. 3: The nominating committee be selected as it is now with one member from each district selected by members of the House from that district (hopefully this would be done at a councilor district meeting held prior to the annual session) and the members of the nominating committee confirmed by the House and announced on the first day of the annual session. The nominating committee would be required to submit its proposed slate of officers of one or more nominees for each position by February 1. The report would then be published in the convention issue of the Society Journal. The election process would otherwise be carried out as at present.

Upon motion of Shuffield, the Council voted to delete the words "as it is now" in the first sentence of the recommendation.

Upon motion of Jouett, the Council voted to refer the recommendation as amended to the Constitutional Revisions Committee.

The committee also requested authority from the Council to ask the Society's legal counsel to meet with the committee to explore the advisability of employment contracts for executives of the headquarters staff. During the discussion of this request, the committee advised the Council that it asked for authorization because it felt hourly charges for legal fees would be involved and that the intent of the committee was only to explore the advisability of employment contracts. The committee would consider information received and decide on whether or not to make any recommendations to the Council. Legal counsel advised that costs involved would be covered by the retainer; therefore, no action was taken by the Council.

3. George Mitchell, president of Arkansas Blue Cross-Blue Shield, discussed medical care cost and the proposed establishment of the Arkansas Commission on Health Care Cost Effectiveness. Upon motion of Williams, the Council voted to endorse the concept of the proposal as presented by Dr. Mitchell.

4. Upon motion of Lilly, the Council voted to authorize expenses for five officers of the Society to attend the 1981 Leadership Conference of the American Medical Association. The five physicians are in addition to the president and president-elect who would automatically be authorized to attend by earlier Council action.



5. Heard legal counsel discuss a proposal for Association Professional Liability Insurance. Upon motion of Kutait, the Council agreed to provide legal counsel and indemnity to the staff of the Arkansas Medical Society in the event of suit arising out of activities relevant to the duties of the staff, except for willful misconduct. A decision on a policy providing liability insurance was deferred until further study could be made by legal counsel.

6. Chairman Burge reported on the results of the mail poll concerning an officers' retreat. The votes for holding the retreat did not meet the minimum specified by the Council; the retreat will not be held.

7. William Jones presented information he had compiled on the reserve funds of the Society. He moved that the Council of the Arkansas Medical Society recommend to the House of Delegates at its meeting on November 16 that dues be reduced to \$175 effective January 1, 1981. After discussion, Williams made a substitute motion directing the Budget Committee to thoroughly study the Society reserves and report to the Council at its next meeting. Dr. Williams' substitute motion carried.

8. By motion of Jouett, the Council directed that an official expression of appreciation be forwarded to American Physicians Insurance Exchange for hosting the cocktail party on Saturday, November 15th.

The Council convened in Executive Session to consider the proposed budget for 1981.

1. Mann moved acceptance of the proposed budget for 1981. Jones made a substitute motion that the 1981 proposed budget be taken up after the Council has considered the report from the Budget Committee on reserves and a possible reduction in dues. The substitute motion carried.

2. Upon motion of Jones, the Council approved implementation of the salary increases proposed by the Budget Committee effective January 1, 1981.

3. Chairman Burge announced that he had selected John Hestir as his appointment to the Budget Committee to succeed Ken Lilly.

Crow moved that the Council rescind its previous action prohibiting Budget Committee members from succeeding themselves and that Ken Lilly be reappointed to the Budget Committee. A secret ballot was called for on the Crow motion. The motion lost.

The Council approved appointment of John Hestir to the Budget Committee.

Upon motion of Shuffield, the Council voted to change the terms of membership for staggered terms on the Budget Committee to a calendar-year basis.

The meeting adjourned at 12:15 p.m.

John P. Burge, M.D.

Chairman

\* \* \* \*

## HOUSE OF DELEGATES MINUTES

November 16, 1980

The House of Delegates of the Arkansas Medical Society met at 2:00 p.m. on Sunday, November 16, 1980, in Fort Smith at the Sheraton Inn. Speaker Amail Chudy presided, assisted by Vice Speaker W. P. Phillips.

Invocation was by Payton Kolb.

Speaker Chudy introduced Mrs. J. Larry Lawson, State Chairman of AMA-ERF. Mrs. Lawson spoke on AMA-ERF and urged members of the Medical Society to participate in the Sharing Card Project for AMA-ERF.

Roll call was by the Executive Vice President, C. C. Long. Present and seated as voting members of the House were: BAXTER, John F. Guenther; BENTON, Richard N. Pearson; CLARK, Gary L. McGrew; CRAWFORD, A. L. Travis; CRITTENDEN, Milton Deneke; FAULKNER, Robert B. Benafield; FRANKLIN, David L. Gibbons; GARLAND, Ronald J. Bracken; GREENE-CLAY, Larry Lawson; INDEPENDENCE, Jim Lytle; OUACHITA, Robert H. Nunnally; POLK, David D. Fried; POPE, James Kolb, Jr.; PULASKI, Edgar J. Easley, Charles W. Logan, Robert F. Shannon, J. Mayne Parker, Kelsy J. Caplinger, III, John McCollough Smith, Ruth C. Steinkamp, Harold D. Purdy, Arthur E. Squire, Jr., Warren M. Douglas, Harold Hutson, Thomas A. Bruce, Fred Kittler, Ray Biondo, Warren Boop, Chalmers Pool, Harry Ward, Charles Crocker and Charles Rodgers; SEBASTIAN, Carl Williams, Annette Landrum, Sam Koenig, J. David Busby, A. C. Bradford, McDonald Poe and Morton Wilson; WASHINGTON, Lee B. Parker and Brian Runnels; YELL, James L. Maupin; COUNCILORS Merrill J. Osborne, Asa A. Crow, John E. Bell, John Hestir, L. J. P. Bell, Raymond Irwin, John P. Burge, Donald L. Duncan, R. Jerry Mann, W. Ray Jouett, William N. Jones, Morris M. Henry, Rhys A. Williams, and Ken Lilly; PRESIDENT

Kemal Kutait; PRESIDENT-ELECT Purcell Smith, Jr.; FIRST VICE PRESIDENT Richard Martin; SPEAKER OF THE HOUSE Amail Chudy; VICE SPEAKER OF THE HOUSE W. P. Phillips; SECRETARY Elvin Shuffield; PAST PRESIDENTS Charles R. Henry, Joseph Norton, Ross Fowler, A. S. Koenig, Jr., W. Payton Kolb, Joe Verser and Stanley Applegate.

Vice Speaker Phillips introduced Mr. Harry Ringler of the Communications Division of the Arkansas State Department of Health. Mr. Ringler spoke on the Emergency Radio Communications Systems.

Vice Speaker Phillips called on James Weber, chairman of the Committee on Medical Legislation, for a report from his committee.

Dr. Weber reminded the members that the Legislature convenes January 12th. He announced that Mike Mitchell and Ken LaMastus would be at the Capitol full time during the session of the Legislature. Members of the Legislative Committee will be at the Capitol on Tuesday, Wednesday and Thursday mornings. He invited all members to attend sessions of the legislative committees and the General Assembly. Dr. Weber asked that physicians acquaint themselves with legislative proposals and discuss the issues with members of the Legislature prior to the opening of the session.

Dr. Weber encouraged members of the Society to participate in the program to provide a physician at the Legislature during each day of the session. Members will receive a mailing from the Society office and are urged to volunteer for a day.

Some of the legislative proposals which may be introduced were reviewed by Dr. Weber. The proposals are as follows:

1. A bill to prohibit requiring hospitalization for payment of medical expenses under disability insurance policies.

2. A bill requiring newborn infants to be tested to detect medical problems which cause irreversible damage if not treated promptly. This concept has been endorsed by the Society.

3. A bill to permit doctors, hospital officials and others to take a child into protective custody without parental consent for 36 hours.

4. Modification of the certificate of need legislation for the State of Arkansas. This bill would bring Arkansas' law into compliance with Federal law. Some modifications of the law, not required by the Federal law, are very undesirable. One section of the proposed bill would grant power to the State Health Planning Agency to obtain almost any statistics and information.

5. A bill pertaining to reproductive health monitoring. This would provide a system for investigation of birth defects by a newly-formed group.

6. Proposals for expansion of physician extenders. Legislation may be introduced to permit physicians' assistants and nurse practitioners to prescribe and dispense medications. There may also be legislation to permit the Director of the Health Department to determine the scope of practice of nurses working for the Health Department.

7. Legislation to make the director of the State Health Department more responsive to the State Board of Health.

8. Legislation to create new boards for occupational licensing.

Speaker Chudy recognized Joe Verser, Secretary of the Arkansas State Medical Board. Dr. Verser reported that the Board's annual registration fee for medical licenses would be increased from \$6 to \$15 in 1981.

The meeting adjourned at 3:00 p.m.

Amail Chudy, M. D.

Speaker of the House of Delegates





# keeping up

## Category 1 Continuing Medical Education Programs Available in Arkansas

### ADVANCED CARDIAC LIFE SUPPORT CERTIFICATION PROGRAM

Presented by Jay Holland, M.D., *February 20, 6:00 p.m. to 10:00 p.m.; February 21, 7:30 a.m. to 6:00 p.m.; February 22, 7:15 a.m. to 6:00 p.m.*, Jefferson Hospital, Pine Bluff. Registration fee \$100.00. 20 hours Category I credit, 12 hours ACEP, and 16 prescribed hours AAFP credit. Co-sponsored by the American Heart Association, AHEC-Pine Bluff, and Department of Emergency Medical Sciences, UAMS.

### TOPICS IN CHILD PSYCHIATRY— VULNERABLE CHILDREN

Presented by John Peters, M.D., *March 6, 8:00 a.m. to 4:30 p.m.; March 7, 9:00 a.m. to 12:30 p.m.*, Arkansas State Hospital Auditorium, Little Rock. Registration fee \$75.00. Nine and one-half hours Category I credit.

### GASTROINTESTINAL RADIOLOGY

Presented by Wilma Diner, M.D., *March 7, 12:00 noon to 5:30 p.m.; March 8, 8:30 a.m. to 3:00 p.m.*, Americana Inn, Little Rock. Registration fee not yet determined. Ten and one-half hours Category I credit.

### ACUTE RENAL FAILURE

Presented by Watson Arnold, M.D., *March 7 and 8, 7:30-12:30*, Holiday Inn, Hot Springs. Registration fee and Category I credit hours not yet determined.

### SOUTHWEST ALLERGY FORUM

Presented by Martin Fiser, M.D., *March 22-25*, Arlington Hotel, Hot Springs. No other information available at this time.

### RECURRING EDUCATION PROGRAMS

Unless otherwise indicated, programs are for one to one and one-half hours Category I credit.

#### FAYETTEVILLE — AHEC-NW

*Medical Teaching Conference*, each Saturday, 7:30 a.m., Washington Regional Medical Center.

#### FAYETTEVILLE — VA MEDICAL CENTER

*Radiology Conference*, February 5 and 19, and March 5 and 19, 1:00 p.m., Conference Room.  
*Pathology Conference*, February 17, 3:00 p.m., and March 10, 1:30 p.m., Conference Room.  
*Mortality Conference*, February 12 and March 12, 3:00 p.m., Conference Room.

#### FORT SMITH — AHEC

*Tumor Conference*, every Tuesday, 12:00 noon, Fourth Floor Conference Room, Sparks Regional Medical Center.

#### JONESBORO — ST. BERNARD'S REGIONAL MEDICAL CENTER

*Interesting Cases*, second and fourth Tuesday, 12:00 noon, Dietary Conference Room. Sponsored by AHEC-NE.  
*Tumor Conference*, third Tuesday, 12:00 noon, Dietary Conference Room. Sponsored by AHEC-NE.  
*Medical Lecture Series*, each Friday, 12:00 noon, Dietary Conference Room. Sponsored by AHEC-NE.

#### LITTLE ROCK — BAPTIST MEDICAL CENTER

*Pulmonary Care Conference*, each Tuesday except last Tuesday in March, 12:00 noon to 1:00 p.m., Dining Room #4.  
*Central Arkansas Primary Care Conference*, second Tuesday, 7:00 p.m. to 9:00 p.m., Auditorium.  
*Cardiopulmonary Resuscitation Course*, second Wednesday, 6:00 p.m. to midnight, Human Resource Development Area.  
Six hours Category I credit.

*Emergency Medicine Conference*, every other Wednesday, 12:30 p.m. to 1:30 p.m., Conference Room #1.  
*Morbidity and Mortality Conference*, first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.  
*Surgery Conference*, February 12, 19, 26 and March 13, 19, 26, 8:00 a.m. to 9:00 a.m., Conference Room #1.  
*Anesthesiology Conference*, third Thursday, 7:00 a.m. to 8:00 a.m., Dining Room #3.

#### LITTLE ROCK — ST. VINCENT INFIRMARY

*Interhospital GI Problems Conference*, first Monday, 6:00 p.m. to 7:00 p.m., Room E155, Education Wing.  
*Pediatric Conference*, first and third Monday, 12:30 p.m. to 1:30 p.m., Room E159, Education Wing.  
*Interhospital Urology Grand Rounds*, first Tuesday, 5:30 p.m. to 6:30 p.m., Room E159, Education Wing.  
*Peripheral Vascular Disease Conference*, third Tuesday, 6:00 p.m. to 7:00 p.m., Room E159, Education Wing.

As organizations accredited for continuing medical education by the Liaison Committee on Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.

*Neuropathology Conference*, third Tuesday, 5:00 p.m. to 6:00 p.m., Room S1169, Laboratory.  
*Pulmonary Conference*, first and third Thursday, 12:00 noon to 1:00 p.m., Room E159, Education Wing.  
*Cardiology Conference*, second and fourth Thursday, 12:00 noon to 1:00 p.m., Room E155, Education Wing.  
*Cleft Palate Conference*, February 18, 12:30 p.m. to 1:30 p.m., Room E159, Education Wing.

#### LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

*Internal Medicine Grand Rounds*, each Tuesday, 8:00 a.m. to 9:00 a.m., Education 1 Auditorium.  
*Neuroradiology Conference*, each Wednesday, 4:00 p.m. to 5:00 p.m., Department of Radiology Conference Room.  
*Radiology Continuing Education Lecture Series*, two Wednesdays each month, 6:00 p.m. to 7:30 p.m., Department of Radiology Conference Room.  
*Categorical Course in Radiology*, each weekday except Wednesday, 4:15 p.m. to 5:00 p.m., Wednesday, 5:00 p.m. to 5:45 p.m., Department of Radiology.  
*Psychiatry Grand Rounds*, each non-holiday Thursday, 12:30 p.m. to 1:30 p.m., Child Study Center Auditorium.

#### PINE BLUFF — AHEC-SW

*Obstetrics and Gynecology Conference*, second Monday, 12:30 p.m., Classroom B, Jefferson Hospital.  
*Family Practice Conference*, first, third, and fourth Monday, 12:30 p.m., Classroom B, Jefferson Hospital.  
*Psychiatry Conference*, each Tuesday, 12:30 p.m., A-V Classroom, Melville Library, AHEC-Pine Bluff Building.  
*Southeast Arkansas Medical Lecture Series*, fourth Wednesday, 6:30 p.m. to 9:00 p.m., dinner meeting at local restaurant.  
*Surgical-Medical Subspecialty Conference*, first Wednesday of alternate months, 12:30 p.m., Classroom B, Jefferson Hospital.  
*Surgery Conference*, first Wednesday of alternate months, 12:30 p.m., Classroom B, Jefferson Hospital.  
*Internal Medicine Conference*, second and fourth Wednesday, 12:30 p.m., Classroom B, Jefferson Hospital.  
*Pediatric Conference*, third Wednesday, 12:30 p.m., Classroom B, Jefferson Hospital.  
*Radiology Conference*, second Wednesday, 12:30 p.m., Classroom B, Jefferson Hospital.  
*Chest Conference*, each Friday, 12:30 p.m., Classroom B, Jefferson Hospital.



## NEW MEMBERS

#### DR. STEPHEN K. BLACKBURN

A graduate of the University of Arkansas, Dr. Stephen K. Blackburn was born in Jonesboro. He is a new member of the Cleburne County Medical Society.

In 1978, Dr. Blackburn was graduated by the University of Arkansas College of Medicine. After an internship in Pensacola, Florida, he returned to Arkansas for the practice of medicine.

Dr. Blackburn has his office for General Practice at 421 South 7th in Heber Springs.

#### DR. CHRISTINA M. JEFFERSON

Dr. Christina Jefferson is a new member of the Franklin County Medical Society. She was born

in Northhampton, Massachusetts.

Dr. Jefferson's pre-med education was at the University of Arkansas. In 1974, she was granted her medical degree by the University of Arkansas College of Medicine.

From 1972 to 1979, Dr. Jefferson served with the United States Army. While in the Army, she served a Straight Medicine internship and Internal Medicine residency at William Beaumont Army Medical Center. From October 1979 to January 1980, she was medical director at Frankfurt Youth Health Center.

Dr. Jefferson is board certified in Internal Medicine. She now practices with Ozark Specialties Clinic, P.A., at 317 West Commercial in Ozark.

#### DR. HON KEI POON

A native of Hong Kong, Dr. Hon Kei Poon is a new member of the Jackson County Medical Society.

After receiving his medical degree from the National Defense Medical Center in Taipei, Taiwan, in 1972, Dr. Poon served an internship and residency at St. Joseph Hospital in Baltimore, Maryland.



## NEW MEMBERS

Dr. Poon specializes in General Practice and General Surgery. His office is located at 1006 McLain Street in Newport.

### DR. ATIYA N. WAHEED

Dr. Atiya N. Waheed, a new member of the Jefferson County Medical Society, is a native of Hyderabad A.P. India.

Dr. Waheed attained her pre-med education at Osmania University Hyderabad A.P. in 1959 and her medical degree at Gandhi Medical College, Osmania University, Hyderabad in 1964. She served an internship, General Practice residency and Pathology residency at the Norwegian American Hospital.

From 1974 to 1980, Dr. Waheed practiced with the Chicago Board of Health.

A board certified Family Physician, Dr. Waheed has her office at 1608 West 42nd Street in Pine Bluff.

\* \* \* \*

### COURTESY MEMBERS

The Jefferson County Medical Society has two new courtesy members:

### DR. DAVID C. JACKS

Dr. David Jacks, a graduate of the University of Arkansas College of Medicine, is an Urologist Resident at the same institution.

### DR. VIMLA MEHTA

Dr. Vimla Mehta was graduated by King George Medical College, Pakistan, in 1968. She is a Family Medicine resident with the AHEC program in Pine Bluff.



## PERSONAL AND NEWS ITEMS

### BOONEVILLE SOCCER

Dr. Younis Asad of Booneville has formed a soccer team for area youngsters. Dr. Asad is teaching the fundamentals of the sport and is attempting to form a Booneville Soccer Club.

### PHOTO EXHIBIT

Thirty-five photographs of landscapes, architecture and wildlife by Fort Smith Cardiologist Dr. Taylor Prewitt were on display at West-Ark Community College in Fort Smith during the month of November.

### CITIZEN OF THE YEAR

Dr. E. C. Fields of Marianna was named "Citizen of the Year" at the annual meeting of the Marianna-Lee County Chamber of Commerce.

### HOSPITAL TRUSTEE

Dr. C. Dudley Rodgers of Little Rock was recently elected to the Board of Trustees of Doctors Hospital.

### MEDICAL ENDOWMENTS

The Department of Psychiatry and Behavioral Sciences at the University of Arkansas for Medical Sciences has received two recent endowments. Income from a \$1.5 million endowment by Marie

Wilson Howells will be used primarily for research development within the department. An endowment from the Arkansas Working Women's Home and Day Nursery established a WOHDAN Chair in Child Psychiatry. Dr. John E. Peters, former Professor and Head of the Division of Child Psychiatry, has been named the first WOHDAN Professor of Psychiatry and Behavioral Sciences.

### UROLOGICAL PRESIDENT

A Little Rock physician, Dr. Ralph A. Downs, was recently elected president of the South Central Section of the American Urological Association.

### MEDICAL MISSIONARY

Dr. R. Teryl Brooks of Pine Bluff recently spent four weeks in Jeon Ju, Korea, demonstrating and lecturing on techniques of urology in clinics and the operating room.

### CEDARSTONE APPOINTMENT

Dr. Charles S. Betts of North Little Rock has been elected as director of research and education, a newly created position, for Cedarstone Psychiatric Institute.

### **FORT SMITH PHYSICIANS HONORED**

The Fort Smith AHEC held a faculty appreciation banquet in November. Dr. Jerry Stewart of Fort Smith, supervisor in the area of Pulmonary Medicine, received the DOC (Doctors Ought to Care) Award. The award gives recognition to the physician who manifests those personal and professional attributes which most nearly approach the ideal physician.

The Black Bag Award went to Dr. Merle McClain, whose primary area of instruction was general pediatrics and care of critical newborns. This award was given for significant contribution to clinical instruction and patient care.

The Good Samaritan Award was presented to Dr. David Hamblin, Urology supervisor. Dr. Hamblin received the award because of his support of Family Practice as a specialty.

A Know Thyself Award was given to Dr. Larry Hyde, attending physician in Obstetrics. This award was given for recognition of Dr. Hyde's efforts to promote the ethical and moral development of residents in non-medically related areas.

### **PHYSICIAN SPEAKS**

During a meeting of the Southwest Arkansas Medical Society Auxiliary, Dr. Arlis Loe gave a slide presentation on different skin disorders.

### **DR. WESTBROOK**

Dr. Kent C. Westbrook of Little Rock has been elected president of the Arkansas Division of the American Cancer Society.

### **RECEPTION**

A welcoming reception was held for Dr. and Mrs. Kelly Miles at the Calhoun County Hospital in Hampton. Dr. Miles has recently begun practice in Hampton.

### **AMERICAN ACADEMY OF FAMILY PHYSICIANS**

The following physicians were named Fellows of the A.A.F.P. at its recent meeting in New Orleans: Dr. Rex W. Ross, Conway; Dr. Phillip L. White, Murfreesboro; Dr. Ronald R. Reese, Harrison; Dr. George McCrary, Jacksonville; Drs. John R. Williams and Robert D. Lawrence, Jonesboro; Dr. Daniel C. Dillard, Little Rock; Dr. Leslie F. Anderson, Lonoke; Dr. Russell W. Cobb, Malvern; Dr. Harold F. Wilson, Monticello; Dr. Wayne Enns, Paris; and Dr. James T. Russell, Prescott.

Dr. David L. Stewart of Benton and Dr. R. S. Venable of Little Rock were named Diplomates of the American Board of Family Practice after

passing the certification examination. Drs. John Delamore and Don Howard of Fordyce were both recertified as diplomates of the American Board of Family Physicians.

### **CANCER CONFERENCE**

Boone County Hospital recently hosted a colon cancer conference. Dr. Jean Gladden of Harrison was program chairman. Among the speakers for the program were Little Rock physicians Dr. W. Ducote Haynes (radiologist), Dr. Jack Sternberg (oncologist), and Dr. Nicholas Lang (surgeon).

### **SURGEON INITIATES**

The American College of Surgeons has announced that Arkansas physicians admitted to Fellowship during the Clinical Congress in Atlanta are: Dr. Robert W. Aspell and Edwin L. Harper of Hot Springs; Drs. Troy F. Barnett, Clifton L. Parnell, III, John D. Pike, Albert R. Thompson, John B. Weiss and Ronald N. Williams of Little Rock; Drs. W. John Giller, Jr., and Moises A. Menendez of El Dorado; Dr. Robert R. Gullett, Jr., of Pine Bluff; Drs. Charles A. Ledbetter and Don R. Vowell of Harrison; and Dr. N. E. Strickland of Batesville.

### **PILOT CLUB SPEAKER**

Dr. Berry L. Moore of El Dorado spoke about his work with the San Blas Indians and his work with the AHEC program during a meeting of the area Pilot Club.

### **NEUROLOGICAL SERVICES**

Members of the Neurological Surgery Associates, P.A., in Little Rock have been doing consultation and referral work in Hot Springs to provide continuity of neurological service since the sudden death of Dr. Surinder Gupta. This service will be continued until another neurosurgeon begins practice in Hot Springs. Members of the Little Rock firm are: Drs. John H. Adametz, Robert D. Dickins, Jr., Wilbur M. Giles, Ray Jouett, David L. Reding and Ronald N. Williams.

### **DOCTOR OF THE YEAR**

Dr. D. B. Stough, III, of Hot Springs was presented a "Doctor of the Year" award by the Garland County Medical Assistants Society at its twelfth annual "Bosses Night" banquet.

### **SPEAKER CHALLENGES**

Dr. Stanley Teeter of Russellville spoke at a Supervisors Training Program on a regular exercise program during which he challenged the participants to begin a regular exercise program for themselves and their employees.





## OBITUARY

### DR. SURINDER N. GUPTA

Dr. Surinder N. Gupta of Hot Springs died November 14, 1980. He was born July 30, 1938, in India. Dr. Gupta was a graduate of Punjab University, India.

In 1967, Dr. Gupta immigrated to the United States. After doing postgraduate work in Neurosurgery at Cleveland Clinic, Ohio, and the University of Arkansas College of Medicine, he began practice in Hot Springs in 1973. Dr. Gupta became a diplomate of the American Board of Neurological Surgery in 1976 and was a member of the Congress of Neurological Surgeons, International Congress of Neurological Surgeons and the American Association of Neurological Surgeons.

Dr. Gupta is survived by his wife, Urmil, one son and two daughters.

### DR. HARRY DAVID BRYAN

Dr. Harry D. Bryan of Benton died December 13, 1980. He was born June 2, 1933, in Fort Smith.

Dr. Bryan received his pre-med education at the University of Arkansas and was granted his medical degree by Tulane University School of Medicine, New Orleans, in 1958. After doing his internship at Good Samaritan Hospital in Phoenix, Arizona, Dr. Bryan served with the United States Public Health Service at Indian Hospital in Winterhaven, California. From 1961 to 1963, he served a residency at the University of Arkansas College of Medicine.

From 1963 to 1977, Dr. Bryan was associated with Yuma Regional Medical Center Hospital in Arizona. While in Arizona, Dr. Bryan was an associate professor with the Arizona Medical School in Tucson. Before Dr. Bryan's retirement in 1979, he practiced with the Veterans Hospital in Little Rock and was an associate professor with the University of Arkansas Medical Sciences Hospital. He was certified by the American Board of Anesthesiology in 1966.

Dr. Bryan is survived by his wife, Mrs. Marguerite Bryan, and two sons.



February, 1981

# THE JOURNAL OF THE Arkansas MEDICAL SOCIETY

Vol. 77 No. 9

FORT SMITH, ARKANSAS

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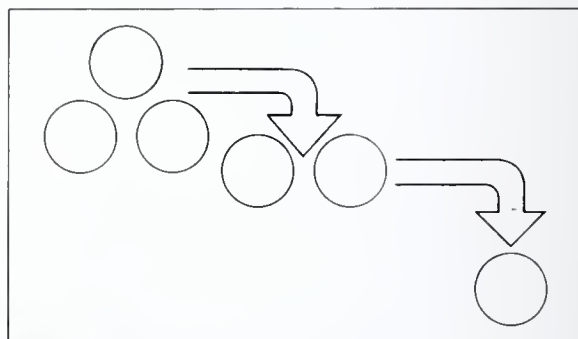
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\*Sellers EM: *Drug Metab Rev* 8(1):5-11, 1978



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**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

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NEWS—Our readers are requested to send in items of news, also marked copies of newspapers containing matter of interest to the membership.

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# ANATOMY IN ARKANSAS' MEDICAL COLLEGE 1879-1979

## The History of a Department Part III of IV Parts "To Whom"

Horace N. Marvin, Ph.D.\*

### Medical Students

During the one hundred years between the fall of 1879 and the spring of 1979, one hundred and one academic sessions were held, and 7,018 beginning students enrolled for whatever courses in Anatomy were taught. There were 101 sessions in 100 years because of the accelerated program during World War II when three academic sessions were completed in two calendar years. Of these 7,018 students, 4,741 had received their degrees by the end of the centennium, 1979 (Figure 29). It is a reasonable expectation that undergraduate enrollees during the 1978-79 academic year will produce another 390 degrees in the subsequent three years. Comparing the total of 5,131 successful students with 7,018 entering freshmen, a centennial attrition rate of 27% appears to be a staggering loss. Reference to Figure 30 tells us that the attrition rate during about the first forty years was very large, being essentially 100% in one year and averaging about 50% for the period. For this same period the only admission requirement was a high school diploma. Between 1910 and 1919 the requirement was raised incrementally to two years of college<sup>4</sup> and the attrition rate dropped to, and stabilized at, about 20%. A commonly recurring story relates to those days when academic survival was difficult. Allegedly the freshman professor told the new class "Shake hands with the person on your right, and again

with the person on your left. At the end of the semester, one of you won't be here." Certainly the decisions to increase the premedical requirements were made by the medical school's administration. Yet it is safe to say that the Flexner Report and the accreditation requirements of the Association of American Medical Colleges were potent, motivating forces in these decisions. As pointed out previously,<sup>4</sup> with every incremental increase in academic requirements for admission, there has been a corresponding decrement in at-

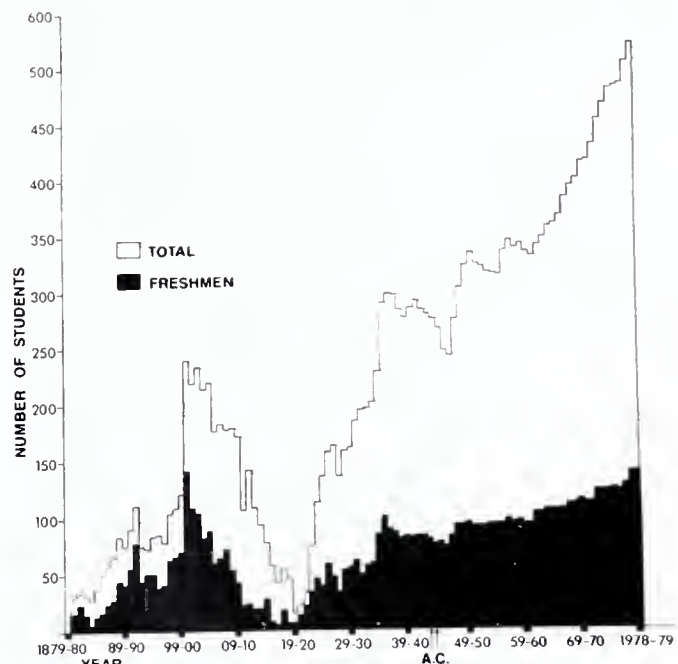


Figure 29.

Histograms relating enrolled first year students and the total enrollment in all four years. The symbol, A.C., refers to classes in the accelerated program during World War II. The more nearly the first year enrollment equals one-fourth of total enrollment, the less the attrition rate.

\*Professor of Anatomy, The University of Arkansas for Medical Sciences, Little Rock, Arkansas.



trition rate. Attrition during the last ten years has decreased to the point that it is more the result of social, psychological or physical factors than the results of inadequate academic capability (Figure 30).

Between 1879 and 1940, students who met the academic entrance requirements in force at the time were admitted without reference to residency status (Figure 31). As a proprietary school dependent upon student fees, it was important to enroll as many students as possible, up to the capacity of the classrooms. Additionally the larger tuition charged non-residents was substantial. Any preference given residents was not legally directed, but rather was by policy established by the administration from appropriate concern for the people whose taxes made the school viable. This effort was circumvented for a time and to a small degree by a lady residing near the McAlmont medical school. It seems she would adopt an occasional non-resident legally for reasons or amounts best known to her, and thus make the individual eligible for consideration as a resident.<sup>11</sup> During World War II the military, both Army and Navy, assigned students to all medical schools, including ours, and many of these V-12 and ASTP students were non-residents; nearly one-half of the class in 1945. After the close of the war those non-residents who were

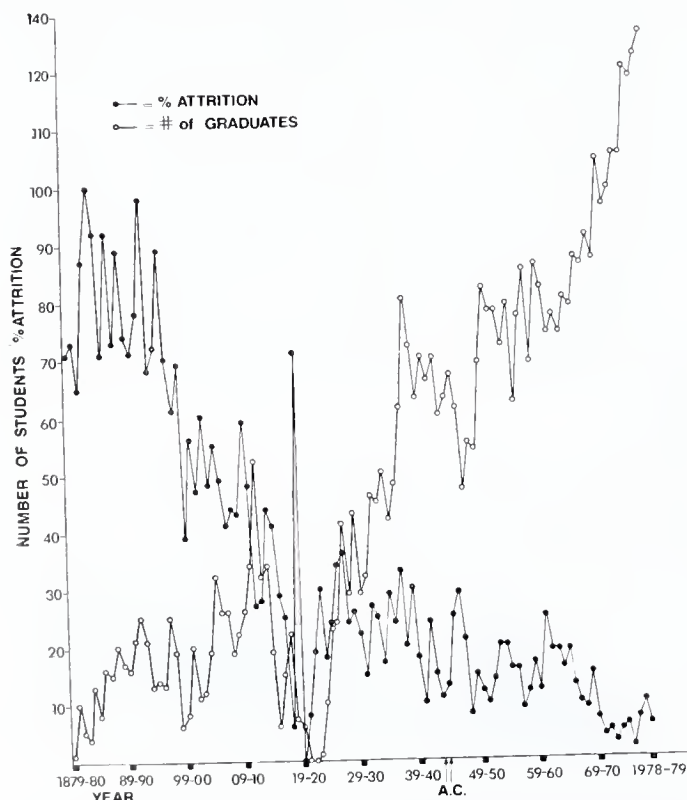


Figure 30.

The attrition rate as percentage of the first year class, and the number of graduates are read on same scale. The symbol, A.C., refers to two classes in the accelerated program of World War II.

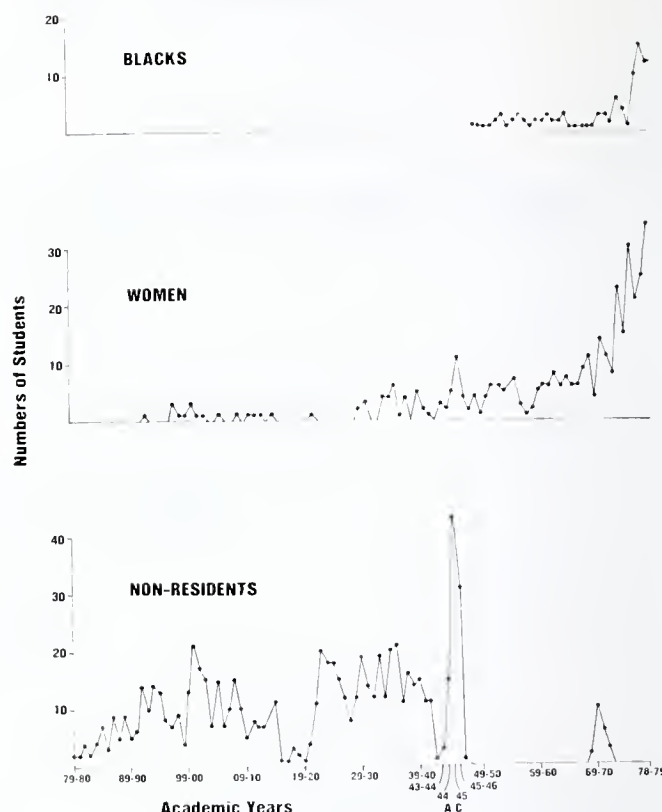


Figure 31.

Graphic representation of the number of Blacks, women, and non-resident students enrolled in the individual first year classes. The symbol, A.C., refers to classes in the accelerated program during World War II.

enrolled at the time continued until graduation. The Arkansas General Assembly was aware of this, and in 1949 enacted legislation which without mentioning non-residents, effectively resulted in enrollment of only Arkansas residents until 1967. That year a new law became effective which, while protecting qualified Arkansas applicants, did permit the admission of a few non-residents when necessary to fill the class with well-qualified students. Now for the last seven years, only bona fide legal residents have composed the first year classes.

In regard to women in the first year classes, Arkansas accepted the first female applicant for the 1893-94 academic year. From then until 1930 some, but not all, of the classes included one to three women (Figure 31). During the period 1930 to 1970, most of the classes included about five women, with 1945 being an exception. During that war year eleven women entered medical school, selected from 17 applicants; a 65% acceptance rate equal to that for men that year. Since 1970 the numbers of women in the first year classes have increased substantially. This is largely the result of increasing numbers of female applicants, not the result of a bias or special effort on the part of the Admissions Committee. This

was true when reviewed in 1974,<sup>10</sup> and again in 1979.<sup>12</sup> The presence of these young ladies in the freshman class did not pass unnoticed by the male students, nor by the faculty for that matter. The professor of Histology had the habit of taking a linen towel from a drawer in the lecture table at the conclusion of the lecture. Giving it a good snap to unfold it, he would then wipe the chalk dust from his hands. One day an item of female thoracic attire hidden in the drawer was picked up by the professor and shaken before the class in his usual fashion. Despite the laughter, and with forced tranquility, he remarked, "Considering the generous measurements, this must have been contributed by one of the two female members of this class." Many of the women married while in medical school, but it is interesting that none of the marriages occurred during the first year. Second and third year female students married with equal frequency, but most marriages were in the fourth year class. The statistics are accurate for women because name changes were recorded, but the marital proclivities of the men are not a matter of record.

The medical school was the first traditionally southern medical school to admit a Black without a court order. The administration of the medical school took the initiative, in 1948, which was truly remarkable when one considers the long tradition to the contrary. But more important to this paper is the impact of Blacks among other students from traditionally southern white families. Initially separate eating arrangements and lavatory facilities were provided, but this soon disappeared. Extemporaneous touch football games played on the lawn in front of the McAlmont school included Blacks, arm in arm in the huddle; a purely student decision. Student dances were not well attended by Black students, but some Blacks did go with their dates and without obvious incident or subtle dissuasion. Exchanging dancing partners between white and black couples did not occur for some time, yet even that barrier fell in more recent times, but not frequently. The number of Blacks admitted to the first year classes varied from none to three from 1948 until 1976 (Figure 31). At that time the Office of Minority Affairs was established, and several important objectives were accomplished. More college level Blacks learned that admission of qualified applicants was a fact, not just words. Black students interested in medical school were

convinced that funds to finance their medical education were as obtainable by them as by whites. Efforts were made to counsel and facilitate the individuals through the application process. And lastly, continuing efforts were made to prepare them before, and assist them during, the first year of adaptation to the educational experiences of medical school. Black students seem to have more difficulty with the new, greater demands of medical school as evidenced by a greater attrition rate. Special assistance being offered during the first year to all students should ease the transition. The results of these efforts are encouraging, and the experience gained should lead to an increasingly effective program.

Describing the student body of the early years is impossible, of course, without having been a direct observer, yet indirectly some picture can be obtained. For example, quoting from the Second Annual Announcement of the Medical Department,<sup>13</sup> "The Class (of 1879-80) was largely composed of students who had already been engaged in the practice of medicine, some for several years, and who, but for the establishment of a Medical College at home, would, in all probability, never have been stimulated to acquire a practical knowledge of even the fundamental principles of medicine, but pursued the practice, as has been the custom heretofore, regardless of consequences." An analysis of class rosters for the early years showed that students commonly enrolled for one session at a time, often with one to several years between the annual enrollments. As a proprietary school, and therefore a business venture, prompt payment of fees was a stringent requirement, in "legal money" and no "promissory notes" were acceptable. Despite the fact that the academic year was only five months, allowing seven months for gainful employment, many students would use these "leaves of absence" to refurbish their financial resources. The school recognized the general financial limitations of its students, and that many of them derived their monies from the sale of crops. To this end the opening of the 1890-91 fall term was deferred from the first week in October until the first week in November because "... many of its staunchest friends and supporters from different portions of the State, have, from time to time, expressed themselves favorable to a later period for the commencement of the Course of Lectures, as possibly affording the greater convenience to the



various students in the State . . . ."<sup>14</sup> This flexible attitude toward schedules and attendance on the part of students and faculty alike continued until the three-year graded system was instituted in 1892. During the few years following the "Panic of 1893," enrollment in the freshman class declined, but there seemed to be no change in the number of students leaving school. A complexity of difficulties<sup>6</sup> affected the medical school, especially a lack of legislative support. Improved physical facilities for first year students at the First State Capital did not halt the decline in enrollments which reached a nadir in 1916 when only four students registered in the first year class. A few years later, the clinical two years were disaccredited, and although this did not affect first year students directly, it did reduce the total student population, and hence environment, to an all time low total of nine. Subsequently the classes increased in size continually. Gradually as transportation eroded the urban/rural distinction, the nature of the classes changed; sophistication broadened and the quality of the educational background improved. Whatever the students' esprit de corps was earlier, the students in the early 40's had a camaraderie, self-reliance, and realistic approach to their situation. At the McAlmont Street school, a group of students gathered in the lecture room to await their individual turns to demonstrate their practical knowledge of the cadaver to Dr. Jeff Banks. Coke bottles with differing amounts of emptiness were tapped with a dissecting probe, and thus Tommy Tyndall's Ileotibial Band came into existence.<sup>15</sup> Similarly students sitting on the steps between the fifth and fourth floors between classes, launched into close harmony with both traditional and not so socially acceptable lyrics. During the intermissions of the periodic student dances, old favorites were sung by students and faculty as best they could at that stage of the evening. With first year classes of 80-90 students, everyone knew everyone else, as did the faculty. With the move to the new medical center in 1956-57, much of this inevitably was lost. Today with about 140 students enrolling each year, reference usually is made to "the class" instead of "the students." The development of factual knowledge has shadowed the development of the student. Yet as it has been, Gross Anatomy, is still the first year course in which student/faculty contact is most effective (Figure 32).

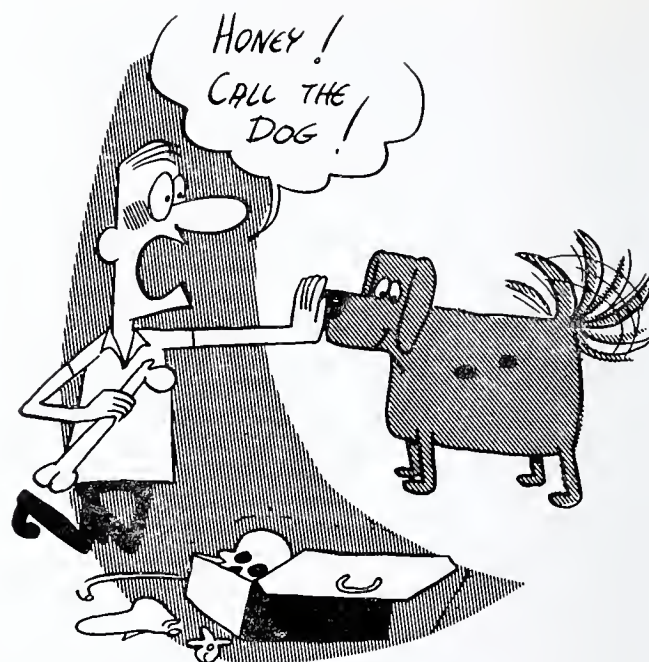


Figure 32.  
Student generated cartoon appearing in the Caduceus (year-book) for 1957.

In some other aspects, perhaps the author may be permitted some reflections on students of the last 38 years. Students in the 40's still carried the belief from the depression era a few years earlier, that *education* was a worthwhile goal. They, too, were anxious to be physicians but this did not overshadow the satisfaction of knowing. Learning was a responsibility they assumed to be theirs. They seemed to differentiate education and training, and to still appreciate the value and necessity of both. From the early 40's to the mid 60's hardly a year went by that the author did not receive and accept offers from students to work with him in research. No stipends were available for such efforts; the income was entirely the satisfaction of learning. It should be remembered that the decade of the 40's included World War II, a war of total commitment. Most of the male students knew that if they "could see lightning and hear thunder" they would be in Uncle Sam's military after they graduated; sooner if they did not. The "good life" was off down the road, and there was no reason or possibility to hurry because Hitler and Tojo had to be taken care of first.

Between the 40's and the 70's a change took place. The chronological ages of first year students in the 70's is not significantly different from those in the 40's, but maturity, self-reliance, responsibility and wisdom appear less developed than in their earlier counterparts. Today's students are much more goal oriented than process oriented; more concerned how they are taught

than how they learn. The general affluence and security of the homes from which they come have led to a desire for instant prosperity, and a generous student financing program has made this desire a reality. They are certainly better informed, but that they are better educated is debatable. They ingest a larger body of facts more rapidly, but concomitant digestion and assimilation may be somewhat less. They are more honest in some ways; they have respect not for position and prestige, but for the person and behavior. "What you are speaks so loud I cannot hear what you say," would characterize their attitudes.

Irrespective of changing times and types of students, involvement in education is challenging and gratifying. So much can be done with students, to students, and by students. Providing a better educational milieu is an awesome responsibility.

#### Graduate Students

Between the first announcement of a graduate program in Anatomy in 1949 and the conclusion of the 1978-79 academic year, 62 people began their studies. Of these, 13 received their degrees by the end of the 1978-79 academic year, and seven were still enrolled. Many of those who did not complete their degree requirements undoubtedly had enrolled purely to improve their qualifications as applicants to medical school; many of them successfully. Several enrolled for a master's program in conjunction with enrollment as medical students, receiving both degrees. Still others, whatever their motivation, found the program too demanding and simply withdrew.

Each of the 13 who received degrees deserves special mention, and a brief note for each follows, arranged chronologically.

1. Turner A. Wood, M.S., M.D. — enrolled in the master's program while a medical student. Received M.D. in June 1961, and M.S. in 1962, both from Arkansas. Thesis: Mechanisms of Transfusion Incompatibility in the Pigeon. Presently in private practice specializing in oncology and hematology.
2. Charles H. Rodgers, M.S., M.D. — received his master's degree in 1965, and then enrolled in medical school with degree conferred in 1970. Thesis: X-irradiation-Induced Alterations in Spinal Cords of Neonatal Rats. Presently in the private practice of medicine.
3. Lucille H. Aulsebrook, Ph.D. — entered the program possessing a master's degree, and

doctoral conferred in 1966. Thesis: Neural Regulation of Oxytocin Release. Presently Associate Professor in the School of Nursing, Vanderbilt University.

4. Lendol L. Davis, M.S., M.D. — received his master's degree in 1966, and then enrolled in medical school for two years. Transferred to the University of Texas at San Antonio, and M.D. conferred there in 1970. Thesis: Histochemistry and Electron Microscopy of the Adrenal Medulla in the Young Post-natal Rat. Present whereabouts unknown.
5. Edwin Hankins, III, M.S., M.D. — received his master's degree in 1966, and then enrolled in medical school with degree conferred in 1970. Thesis: Mitotic Activity in the Spinal Cord of Neonatal and Young Rats as Demonstrated by the Colchicine Technique. Presently in the private practice of ophthalmology.
6. William M. Clark, M.S. — completed the program and master's degree conferred in 1968. Thesis: Electrophysiological Study of Limbic Projections to Septal Nuclei in the Cat. Present whereabouts unknown.
7. Lawrence D. Furlong, Jr., M.S., M.D. — enrolled in the master's program while a medical student, and received both degrees in 1971. Thesis: The Influence of the Septum and Inferior Colliculus on Units of the Medial Geniculate Body. Presently in the private practice of Radiology.
8. S. William Whitson, Ph.D. — completed the program, and degree was conferred in 1971. Thesis: The Effects of Estrogen and Parathyroid Hormone on the Biodynamics of Mature Compact Bone. Presently Associate Professor of Anatomy, Southern Illinois University School of Dental Medicine.
9. H. Richard Brown, Ph.D. — completed the program and degree conferred in 1972. Thesis: An Investigation of Some Biological Phenomena Associated with Recurrent Growth of Ehrlich Ascites Tumor. Presently a post-doctoral fellow at the University of Utah College of Medicine.
10. Margaret L. Kirby, Ph.D. — completed the program and degree conferred in 1972. Thesis: Catecholamines in Early Chick Embryo. Presently Assistant Professor of Anatomy at the Medical College of Georgia.
11. Ruthann P. Sturtevant, Ph.D. — completed the program and degree conferred in 1972.



Thesis: A Search for Biological Rhythms in Prokaryotic Organisms. Presently Assistant Professor of Anatomy, Loyola University Medical Center.

12. John S. Daniels, M.S., M.D. — enrolled in the master's program while a medical student and received both degrees in 1974. Thesis: The Question of Retrograde Axoplasmic Transport in the Hypoglossal Nerve of the Rat: An Autoradiographic Study of Brainstem Labelling Patterns Following Injection of Tritiated Leucine. Presently in the private practice of medicine.
13. Paul F. Robinson, Ph.D. — completed the program and degree conferred in 1979. Thesis: A Comparison of Cryogenic and Electrolytic Lesions and of Seizure Phenomena in the Albino Rat. An Histopathologic and Electroencephalographic Study. Presently enrolled in medical school.

All six of the students who completed the doctoral program served as teaching assistants in the three basic courses in anatomy. They not only made a significant contribution to the teaching of these courses, but also developed their knowledge in the best possible way by teaching it to others. Except for the most recent graduate who is presently enrolled in medical school, the Ph.D. graduates are distinguishing themselves as teachers and/or researchers in the anatomical disci-

plines. The graduate program in the department is not large, rather its thrust is the quality training of future academicians in basic or clinical science.

#### Others

The teaching efforts of the faculty have not been confined to first year students. At least by the late 30's, occasional lectures on selected subjects were requested by the clinical faculty. The subject was, of course, anatomical not clinical. In some areas the participation was frequent enough to result in an appointment in a clinical department. For example, Dr. McCullough was Associate Professor of Neurology (1950-57) in recognition of his efforts with students in the third year Neurology rotation. Also, Dr. Horace Marvin held an appointment in the Department of Medicine, presenting a course in Endocrinology to third and fourth year students. Medicine and Surgery Ground Rounds, Clinical Pathology Conferences (before they unfortunately were discontinued), Hospital Staff Meetings, meetings of House Staff in the specialties, and Postgraduate Medical Education Programs all have been recipients of contributions by anatomists on many occasions over the years. In last few years, programs in special areas have been made available as electives for senior students, and Gross Anatomy for Obstetrics and Gynecology has been selected consistently each year.



# Oral Orthopedics for the Treatment of Head and Neck Pain

Jack C. Porter, D.D.S.\*

Pains associated with the head and neck are a complaint heard daily in the physician's office. They are the reason for more than half their patients' office visits.<sup>1,2</sup> Complaints include stiffness and tenderness about the head, neck and shoulders, headaches, ear problems, and clicking of the temporomandibular joint. Many times the cause is undiagnosed, even after extensive testing by various specialists. Patients' conditions are then labeled psychosomatic and said to be a result of overstress or emotional instability. Recent clinical research, however, has shown that the most common cause of head and neck pain is muscle in origin.<sup>3</sup> Laskin<sup>4</sup> at the University of Illinois suggested the term Myofascial Pain Dysfunction Syndrome (M.P.D.) to describe this muscle induced pain. This article is designed to explain a cause for M.P.D., give the symptoms, and offer a treatment solution.

To understand the cause of M.P.D., one must understand the significance of teeth occlusion. The position in which the maxillary and mandibular teeth assume maximum interdigitation is defined as centric occlusion.<sup>5</sup> Jaw movements in and out of this position allow for maximum chewing efficiency. Extensive research data has shown that centric occlusion, apparently by feedback to proprioceptors, is the dictator and controller of the posture and skeletal relationships of the mandible to the skull.<sup>6</sup>

There are four muscle groups that are related either directly or indirectly in positioning the mandible to obtain centric occlusion. They are the muscles of mastication, the suprahyoids, the infrahyoids, and the posterior neck muscles.<sup>7</sup> In an ideal state, centric occlusion and the neuromuscular activity required to obtain it should be in harmony. However, this is not always the case. Causes for the discrepancy can be developmental in origin, the result of tooth loss and repositioning, and poor dental restorations, just to name a few.

In cases of disharmony, maximum tooth contact and efficient function can only occur by the muscles working in a strained position. This

habitual straining results in fatigue and spasm in one or more of the various muscle groups. Because of proximity, similar innervation, compensatory mechanisms, etc., various other head and neck structures can become symptomatic also. Space does not permit a detailed analysis of all these integrated relationships, although the relationships are well documented in both medical and dental literature.

To aid the physician in diagnosis, the symptoms resulting from M.P.D. include the following:<sup>8</sup>

1. Local temporomandibular joint syndrome — pain on movement and limited motion of the temporomandibular joint, clicking on movement, crepitation and hypermobility.
2. Peripheral symptoms — headache, vertigo, mild catarrhal deafness, tinnitus, stopping or stuffing sensations in the ears, pain in or about the ears, burning or pricking sensations of the tongue, throat and nose, dryness of the mouth, tics of the face and neck, certain neuralgias of the neck and back, as well as pain over the vertex, occiput and postauricular areas.
3. Bruxism, including subjective symptoms — gnashing (wearing facets) and clenching of teeth with associated muscle fatigue, pain and soreness of the temporomandibular joints and the periodontal membrane.
4. Tenderness on palpation — tenderness of the temporomandibular joints, the muscles of mastication and the muscles of the neck and back.

When myofascial pain dysfunction is suspected, the physician should consider referral of the patient to a dentist knowledgeable in its treatment. The treatment is accomplished through oral orthopedics.

Oral orthopedics is defined as the concept of dental science and art concerned with postural relationships of the jaws, both normal and abnormal; analysis of the harmful influence of improper relationships of the mandible to the maxilla on dental and other related structures; the diagnosis and correction (as far as possible) of such malrelationships; and the treatment or prevention of disturbances resulting therefrom.<sup>9</sup>

The objectives of oral orthopedics can be ac-

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complished by harmonizing centric occlusion with an unstrained neuromuscular apparatus required to obtain it. This involves both relaxing affected musculature and altering teeth relationships.

The dentist has a variety of options for relaxing the muscles. These include exercises, drug therapy and transcutaneous electroneural stimulation (TENS). In conjunction with this, the occlusion can be altered by various methods, including mandibular repositioning splints, tooth recontouring, tooth replacement, orthodontics, and surgery if the problem is skeletal in origin. Eliminating craniomandibular abnormalities through oral orthopedics will eliminate myofacial pain dysfunction and its associated symptoms.

The information presented here is an attempt to guide the physician toward a diagnosis that heretofore has been largely overlooked. Physicians and dentists knowledgeable of the interrelationship of craniomandibular anomalies and head and neck pain can broaden the treatment to include oral orthopedics. Hopefully, such cooperation will help patients suffering from these

ailments to live a more pain-free and normal existence.

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# Recent Developments in Diabetes Mellitus

Louis L. Sanders, M.D.\*

As time passes, we are recognizing more and more that diabetes mellitus is a syndrome, consisting of many diseases with a final common pathway of hyperglycemia. This heterogeneity presents problems of terminology. Recently there has been yet another group attempting to develop a common classification and nomenclature that can be used throughout the world.<sup>1</sup> This group has suggested the following classification:

1. Insulin Dependent Diabetes Mellitus (IDDM). This corresponds to the old Juvenile-Onset Diabetes (JOD) or childhood diabetes.
2. Non-Insulin Dependent Diabetes Mellitus (NIDDM). This corresponds to the old Adult Onset Diabetes (AODM) or Maturity Onset Diabetes (MOD).

This classification has the advantage of being based on the functional status of the patient rather than the age of onset.

Diabetes mellitus has a variety of etiologies. Recently there has been much interest in the viral etiology of diabetes. There have been no proven cases of a viral etiology of diabetes, but the association of diabetes with viral illness has been known for years. A list of some of the viruses associated with diabetes is shown in Table 1. The production of pancreatitis by mumps virus has been associated with some cases of diabetes. There was a well-studied outbreak of rubella in pregnant women in Australia that was followed by an increased incidence of diabetes in the offspring.

Coxsackie B-4 virus has been implicated in the production of diabetes both here in the United States and England. An article in the New England Journal of Medicine in May 1979<sup>2</sup> described

a boy who developed fulminant ketotic diabetes a few days after a flu-like illness. Coxsackie B-4 virus was isolated from his pancreas. Other viruses have been associated with diabetes in experimental animal models.

The heterogeneity of diabetes can also be observed by the differing incidence of anti-islet cell antibodies. These can be demonstrated by immuno-fluorescent techniques on almost three-fourths of newly-diagnosed IDDM patients, but are seen in only a small percentage of NIDDM patients.

There has been much interest recently in the HLA antigens in relation to diabetes. HLA stands for human leukocyte antigens. They were discovered because of interest and research in the area of tissue and organ transplantation. Investigators tried to find ways to tissue-type individuals so that better genetic matches could be obtained with less rejection of transplant tissue. It was found that there are a series of antigens present on the surface of the leukocytes (and probably on the surface of all cells in the body) that determine the genetic uniqueness of the individual. There are four main loci of those antigens: A, B, C, and D, with many independent alleles at each locus. The more closely the donor and recipient match with these antigens, the better the chance for survival of the transplanted tissue. The A, B, and C antigens can be determined fairly easily serologically, but the D antigens must be determined by a mixed lymphocyte tissue culture and are much more difficult to identify. There has been considerable interest in trying to match HLA genotypes with specific disease, sometimes with remarkable success. For instance, patients with inflammatory involvement of the sacro-iliac joints either with ankylosing spondylitis, Reiters syndrome, or inflammatory bowel disease, almost always have the B-27 HLA gene. It was inevitable that in a disease with a genetic background like diabetes, that HLA associations would be sought, and indeed some associations have been found. The B-8, B-15, DW 3 and DW 4 genotypes have all been associated with an increased likelihood of developing diabetes. The B-8 and B-15 genes seem to roughly double or triple the risk of developing diabetes, while persons with DW 3 or DW 4 have a five-fold risk of developing diabetes.<sup>3</sup>

**TABLE 1.**

## **Viruses associated with diabetes mellitus**

### **VIRAL ETIOLOGY OF DIABETES**

Mumps  
Rubella  
Rheovirus  
Coxsackie B<sub>4</sub>  
Encephalomyocarditis Virus  
Infectious Mononucleosis Virus  
Infectious Hepatitis Virus

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In Japan, B54 and B12 are associated with increased risk of diabetes. In caucasians, the presence of the B7 gene decreases the likelihood of developing diabetes and thus seems to be protective.

The HLA associations in diabetes are summarized in Table 2. As can be seen there are marked differences between diabetes with the B8 genotype and those with the B15 genotype. In addition to having anti-islet cell antibodies, those with the B8 genotype have an increased frequency of auto-immune endocrine disorders such as Addison's disease and thyroiditis.

There is a heterogeneity in diabetes occurring in younger individuals. In addition to the usual juvenile-onset diabetes there is another type of diabetes that has been called maturity-onset diabetes in the young (MODY).<sup>4</sup> These patients may also develop their diabetes at an early age, but in many cases it is discovered serendipitously; in spite of having blood sugars of 200-400 mg%, they have little or no symptomatology. They are non-ketotic and can be controlled for years without insulin, with little or no progression of their carbohydrate intolerance. Their insulin secretion resembles that seen in AODM, and there is a very high family incidence of diabetes (Table 3).

**TABLE 2.**  
**HLA ASSOCIATIONS WITH DIABETES**

	B8	B15	Dw3/ Dw4
Relative risk for diabetes	2.5	2.5	4.5
Insulin Antibodies	No	Yes	
Diabetic Complications	↑	Not	
	Micro- angiopathy	Increased	
Islet cell antibodies	Persistent	Transient	
Other autoimmune endocrine diseases	Yes	No	
Age of onset	Any Age	Younger Age	

**TABLE 3.**  
**Genetic associations with maturity-onset-diabetes  
in the young (MODY) and  
juvenile-onset-diabetes (JOD)**  
**COMPARISON OF JOD AND MODY**

	MODY %	JOD
Diabetic Parent	85	11
Diabetic Sibling	53	11
Three-generation transmission	46	6

Finally, there was a very elegant study on monozygotic twins with diabetes done by Tattersall and Pike.<sup>5</sup> They accumulated a large number of identical twins in whom at least one had diabetes. When they looked at the concordance or discordance of diabetes, they found that it depended on when the index twin developed his diabetes. If the index twin develops his diabetes before the age of 40 (corresponding roughly to IDDM) there was only a 50% concordance. If the diabetes developed after 40 (corresponding roughly to NIDDM), there was about a 90% chance of concordance. Thus in this twin study, genetic factors seem to play a much larger role in NIDDM than in IDDM.

### Insulin Receptors

There has been a large amount of interest in insulin receptors in the last decade. We now recognize that the cell membrane is a very complex structure made up of a lipid bilayer in which there are floating islands of protein which may extend partly or completely through the lipid bilayer. Some of those protein islands are actually receptors for various hormones that act on the cell. There are insulin receptors on the surface of many cells of the body, not only on the cells upon which insulin acts. For instance, many of the studies of insulin receptors have been carried out on monocytes, where as far as we know, insulin has no action. There is evidence to suggest, however, that the insulin receptors are identical no matter which cell they are on.

These receptors vary in number from time to time, and can increase or decrease with different physiologic conditions. For example, decreased insulin receptors are found in obesity, and are thought to contribute to the insulin resistance seen in that condition. It has been shown that NIDDM patients have fewer insulin receptors on their monocytes.<sup>6</sup> Furthermore, treatment of these patients with sulfonylureas increases the number of receptors as they produce a fall in blood sugar, suggesting that increasing the receptors facilitates the entry of glucose into the cells. This gives an additional physiologic basis for the use of sulfonylureas.

There are also cases described where insulin secretion is very high and the patient is still hyperglycemic; in this case there seems to be an abnormality of the receptors themselves.

### Diagnosis

The diagnosis of diabetes still gives us prob-

lems. The patient who has a blood sugar of 400 mg%, and is clearly symptomatic is no problem. The problem occurs in the asymptomatic patient with borderline blood sugar. There are still no uniform criteria for normality or abnormality of glucose tolerance. The International Study-Group that produced the IDDM-NIDDM classification has made certain recommendations.<sup>1</sup> They suggest the use of 75 rather than 100 grams of glucose as the test dose, stating that the blood sugar responses are essentially equivalent, but the 75 gram dose produces fewer and milder osmotic side effects than the 100 gram dose. Their suggested criteria for blood sugars are shown in Table 4. Others would not agree on these criteria, but would substitute either higher or lower blood sugars.

I do think that it is important in diagnosing diabetes in older individuals to take into account the age-related deterioration in blood sugars that is seen in the population as a whole. Using the nomogram developed by Andres at the National Institute of Aging<sup>7</sup> will prevent us from doing this and still will not cause us to overlook any truly significant glucose problems.

#### Hemoglobin A<sub>1c</sub>

It has been shown that there are several minor components of hemoglobin A, the typical adult hemoglobin. On electrophoresis, they travel more rapidly than hemoglobin A, and have been labeled hemoglobin A<sub>1a</sub>, A<sub>1b</sub>, and A<sub>1c</sub>. Furthermore, it has been shown that these minor components are increased in patients with diabetes, especially Hgb A<sub>1c</sub>. Hgb A<sub>1c</sub> is a molecule of ordinary Hgb A which has had extra glucose molecules added to it in a post-translational change. It has been shown that the amount of Hgb A<sub>1c</sub> can be correlated roughly with the blood sugar: the higher the blood sugar, the greater the amount of Hgb A<sub>1c</sub>. Furthermore, it takes some time to change the amount of Hgb A<sub>1c</sub> in the circulation; it will not go up or down overnight, but takes 2-4 weeks of high blood sugars

to raise it, or lower it. Thus the level of Hgb A<sub>1c</sub> can serve as an index of diabetic control over an extended period of time, in contrast to the blood sugar which is at a single point in time and can be rather easily manipulated by the patient if he so chooses.

At the current time, there are methodological problems that prevent us from using this test on a routine basis. There are commercial kits available for Hgb A<sub>1c</sub> determination, but their accuracy and reproducibility leaves something to be desired. In all likelihood these problems will be worked out in the next year or so, and Hgb A<sub>1c</sub> determination will give us a very useful tool in following the control of our patients.

#### Treatment of Diabetes

##### Diet

One good thing that has come out of the University Diabetes Group Program Study has been to re-emphasize the importance of diet. We as physicians have been guilty of telling our patients they ought to follow a diet, but giving it mainly lip service, not really expecting our patients to do so. We need to re-emphasize the primacy of diet and weight loss in our NIDDM diabetics. We have all seen examples of patients whose glucose intolerance improves or normalizes upon weight loss; this has been graphically illustrated in an article by Genuth.<sup>8</sup> Since most NIDDM patients are obese, this group accounts for the bulk of diabetics we see and in these, weight loss is absolutely essential.

How is it accomplished? By using whatever seems to work in a particular patient. Weight Watchers and their group approach is useful for some; others are helped by concentrated attention by someone (nurse, dietician, etc.) at the physicians office, with weekly weigh-ins, etc. The group at Emory University headed by Dr. John Davidson, has used a different approach. They use a one week total fast, followed by periods of 400-800 calories per day, alternating with fasting until ideal body weight is achieved. Whatever approach is taken, it is not necessary to get the patient down to ideal body weight before improvement in blood glucose is seen. Often a rather modest 10-15% weight loss will be accompanied by significant lowering of the blood sugar. The role of the physician is to convince the patient of the absolute necessity of weight loss.

Injected insulin is relatively contraindicated in

TABLE 4.

#### DIAGNOSIS OF DIABETES

Recommendations of International Study Group  
Diabetes — after 75 gm glucose load

1. 30 min or 1 hr value > 200 mg/dl
2. 2 hr value > 200 mg/dl

Impaired glucose tolerance — 75 gm glucose load

1. 30 min or 1 hr value > 200 mg/dl
2. 2 hr value > 140 mg/dl



obese NIDDM patients, regardless of the blood sugar. Because these individuals are usually resistant to begin with, higher and higher doses of insulin are given in a futile attempt to lower the blood sugar, with the weight climbing all the while.

In addition to being relatively ineffective and fat retaining, there is some evidence, based on studies in experimental animals, that large doses of insulin may actually be atherogenic. In rats, insulin promotes the uptake of acetate by arterial intimal tissues, and also promotes the subsequent synthesis of that acetate into cholesterol.

For these reasons, obese NIDDM patients should be placed on a reducing diet, and in some cases, may be given sulfonylureas (though even these may retard the rate of weight loss), but should only under the most exceptional circumstances be given insulin.

#### Insulin Therapy

There has been renewed interest in the use of low dose instead of high dose insulin in the treatment of diabetic ketoacidosis. A study comparing routine dosage versus low dosage was done by Dr. Abbas Kitabchi.<sup>9</sup> There was no difference in the time to lower the blood sugar, but there were fewer hypoglycemic episodes using the low dose method, and there was less hypokalemia. It would appear that the low dose method, either by IM injections every hour, or IV constant infusion, would be the preferred method of treating diabetic ketoacidosis. IV insulin requires a constant infusion pump and good nursing care for optimal use, so in many small hospital settings, the IM route might be preferred. Hourly injections of small amounts of regular insulin will give a slow, steady, safe decline of the blood sugar, avoiding hypoglycemia and hypokalemia.

If the patient is to be treated with NPH insulin, we must recognize that all patients do not react to a single morning injection of NPH in the same manner. (See Figure 1.) Some patients will have blood sugars that stay in the normal range throughout the day (B Curve). Other patients will have a markedly high blood sugar in the morning, with a fall into the normal range as the day progresses, only to rise again throughout the night, accompanied by nocturia and polyuria (Curve A). If the dose of NPH insulin is increased sufficiently to produce a normal fasting blood sugar, the whole curve will be depressed

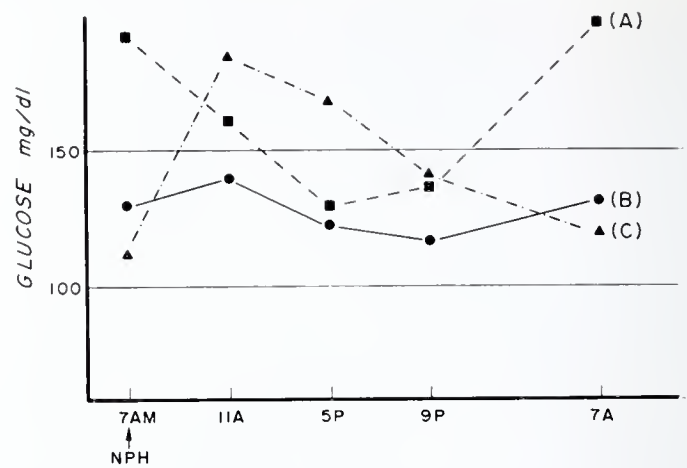


Figure 1.  
Types of response to a single daily injection of NPH Insulin.

and the patient will become hypoglycemic during the day. These individuals metabolize their NPH insulin more rapidly, so that they are running out of hypoglycemic effect by late in the afternoon and becoming hyperglycemic through the night. They simply cannot be managed on a single injection of NPH. What they need is two injections of NPH, roughly 2/3 given in the morning with breakfast and 1/3 given before supper in the afternoon. With this, their blood sugars usually smooth out.

Another small group of diabetics on NPH insulin will have a normal fasting blood sugar, but their blood sugar rises rapidly after breakfast, and remains high much of the day, accompanied by polyuria (C Curve). These individuals have a delayed onset of action of the NPH, thus allowing the daytime escape of the blood sugar. They need a single injection of a mixture of NPH and regular insulin before breakfast, the regular insulin to hold the blood sugar down until the NPH can take effect.

Statistically, about 65% of patients on NPH will follow the B Curve, around 20-25% the A Curve, and 10-15% the C Curve. However, in the individual hospitalized patient newly placed on NPH, it is desirable to curve him before sending him home. A patient can be curved on an out-patient basis, it is probably best to use fractional urinary glucose determinations, with specimens collected from 7 a.m. to 3 p.m., 3 p.m. to 11 p.m., and 11 p.m. to 7 a.m. If the patient has a B Curve, his urine spill will be equally distributed throughout the three specimens. The A Curve patient will have the bulk of his urinary glucose in the 11 to 7 specimen: the C Curve patient will have most of his urinary glucose in the 7 to 3 specimen.

Urinary glucose determinations are a useful way to follow the control of a diabetic patient, but only if the renal threshold for glucose is known. While the normal mean renal threshold for glucose is 160-180 mg%, the range may vary from 90 to 300+ mg%, and the same thing is true of diabetic patients. A diabetic patient with a high renal threshold may run negative urines all the time, even though his blood sugars are 250-300 mg%. In this case the negative urine checks can mislead one into thinking the patient is under reasonable control when he is not. The renal threshold must be determined individually for every diabetic patient. This can easily be done if a blood sugar is done at the time a doubly-voided urinary glucose (by the 2-Drop Clinitest® Method) shows a trace of glucose. We then know that the renal threshold is about 5 mg% less than the blood glucose. Thus the two things that are most important to do for a hospitalized IDDM patient are: (1) to determine the renal threshold and (2) to determine how they handle NPH insulin.

For very difficult-to-control, brittle diabetics that we all see from time to time, two injections of insulin per day, both consisting of NPH and regular insulin, may give the best control of the blood sugar. We call this the 2/3 - 1/3 method. Two-thirds of the total daily insulin dose is given before breakfast, and one-third before supper. Of the breakfast dose, 2/3 is given as NPH insulin and 1/3 as regular insulin. The same thing is true of the supper dose. For example, if the patient is to receive 36 units of insulin per day, we would give 24 units before breakfast which would

be given as 16 units NPH, 8 units regular. The supper dose would be given as 8 units NPH, 4 units regular. This method seems to give a better spread of insulin activity throughout the 24 hours, and usually gives better control of blood sugar than any other method we have tried.

In summary, we have discussed some of the recent advances in classification, etiology, pathophysiology, diagnosis, and treatment of diabetes. Though we have learned much, we have much more to learn. Diabetes continues to present major challenges to practicing physicians.

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## ELECTROCARDIOGRAM



## OF THE MONTH

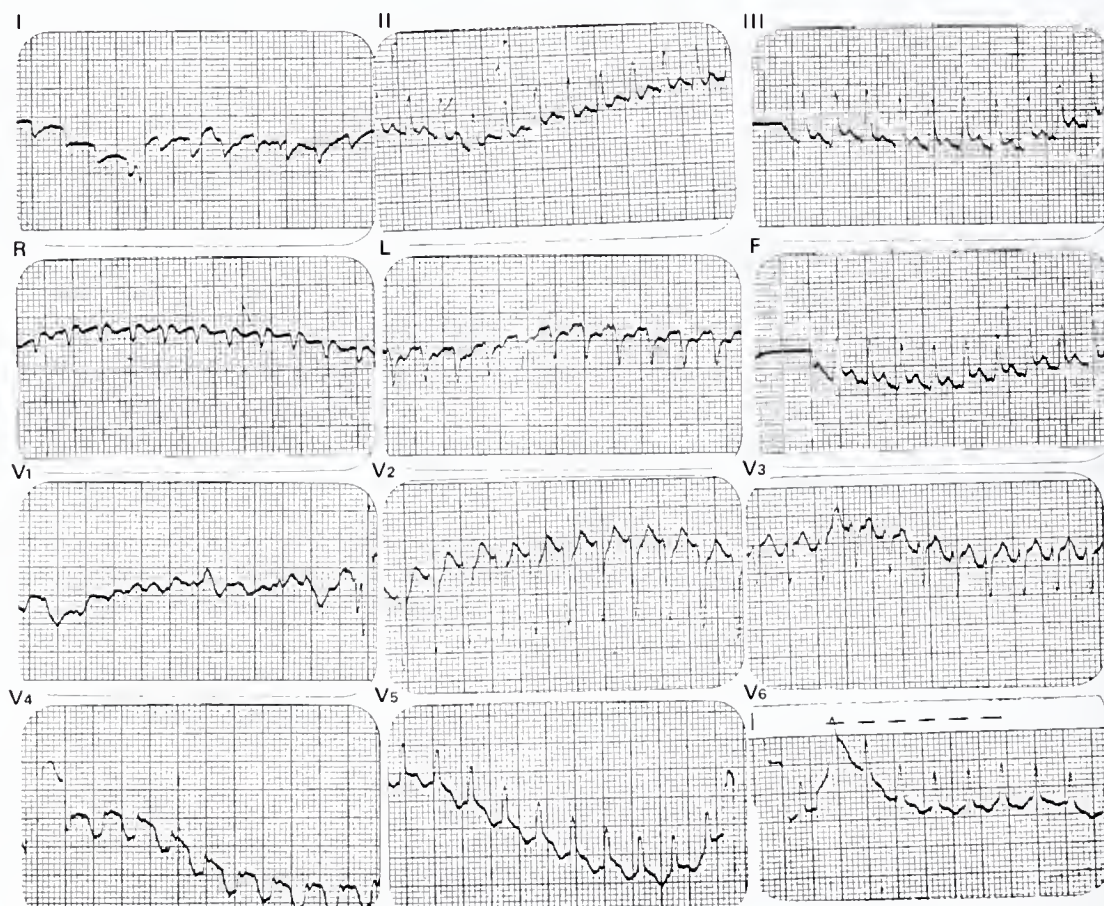
The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 365)

**HISTORY:** R. L. S. is a 46-year-old male who presented to the hospital because of syncope. He has a past history of paroxysmal atrial tachycardia controlled with digoxin and propranolol but has admitted to difficulties with compliance to his medical program. Under observation, he developed the arrhythmias depicted below and became hypotensive.

The treatment of choice would be:

- A. Lidocaine
- B. Pronestyl
- C. Digoxin
- D. Countershock



John W. Watson, M.D.  
Assistant Professor  
Division of Cardiology  
University of Arkansas for Medical Sciences  
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Little Rock, Arkansas 72201



# Office Orthopaedics

## EXTREMITY SPLINTING — PART II "The Lower Extremity"

R. Barry Sorrells, M.D.\*

"Extremity Splinting — Part I 'The Upper Extremity'" appeared in the August 1980 *Journal of the Arkansas Medical Society*. This article continues and concludes with splinting methods applicable to the lower extremity.

### The Hip and Femur

Adequate splinting for injuries about the hip and femur is difficult. The distal lever arm is long and heavy, the area of solid purchase proximally for the splint is small and nonrigid. The splint must rely on purchase of the pelvis through the ischium or by circumferential attachment to the lower torso.

The femur and usually the entire lower extremity can be immobilized by a longitudinal strut extending from the waist or lower chest area to the foot, attached laterally. A bed slat or other rigid strut will suffice in an emergency. If nothing else is available the uninjured opposite leg may be padded and strapped to the injured side. Buck's traction (Figure 1) exerted by a longi-

tudinal pull on the extremity, offers a moderate degree of immobilization. The popular and usually available Thomas splint (Figure 2) will serve adequately. This splint functions through a snug fit on the ischium by the padded posterior ring and longitudinal traction applied to the ankle and foot. Immobilization is not complete, but is usually adequate for at least transportation purposes. The more sophisticated Hare traction splint (Figure 3) is now carried by many ambulances and stocked in many emergency rooms. The principle of ischial counter-traction and long axis leg traction is similar to the Thomas splint. The device, however, is more easily applied and control of immobilization is more precise.

### The Knee

The knee is much more easily splinted than the other joints of the lower extremity because of the long cylindrical members above (thigh) and below (leg). Almost any rigid structure extending

#### Thomas Leg Splint in Full- or Half-Ring Styles



Figure 2.  
Thomas splint.



Figure 1.  
Buck's traction.

\*Little Rock Orthopedic Clinic, P.A., 9500 Lile Drive, P.O. Box 5270, Little Rock, Arkansas 72205.



from the upper thigh to the lower leg will suffice. Wooden slats or plaster slabs applied medially and laterally and wrapped circumferentially about the thigh and leg serve well. The inflatable plastic splint (Figure 4) or the posterior metal "gutter" splint (Figure 5) work nicely as a temporary measure. The prefabricated knee immobilizer (Figure 6) with metal stays and Velcro closures, while relatively expensive, is easily applied, moderately comfortable, and often can serve as definitive immobilization treatment as well.

### The Leg

As with the knee, adequate immobilization of the leg can usually be easily obtained — especially when the knee and ankle are included in the immobilizing device. Again, slats and plaster slabs may be used. The inflatable splint (Figure 4) or the posterior long-leg gutter splint (Figure 6) can be used to include the knee and ankle/foot unit.



Figure 3.  
Hare traction splint.



Figure 4.  
Inflatable plastic leg splint.

### The Ankle/Foot

Moderately rigid immobilization of the ankle/foot unit can be obtained with a posterior splint — either the commercially available metal "short-leg" gutter splint (Figure 7) or a custom molded posterior splint of plaster or plastic, as previously described. An ankle immobilizer (Figure 8) with metal stays and Velcro closures is available and may serve as definitive treatment.

### Conclusion

Simple splinting of the upper and lower extremities has been described in two articles. Most of the materials recommended are, and should be, found in any emergency room and in most ambulances and doctors' offices.

Splinting is frequently indicated as emergency



Figure 5.  
Knee gutter splint.



Figure 6.  
Knee immobilizer.

treatment in extremity trauma, and may serve as definitive treatment as well.

It behooves the Office Orthopedist to be proficient in extremity splinting.



Figure 7.  
"Long-leg" gutter splint.

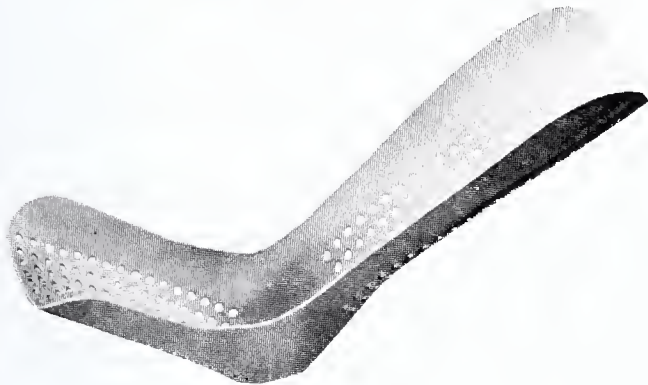


Figure 8.  
"Short-leg gutter splint.



Figure 9.  
Ankle immobilizer.







## EDITORIAL

# PROSTAGLANDINS

Alfred Kahn, Jr., M.D.

Prostaglandins are a fairly recently discovered family of chemicals which are widespread throughout the human body. Numerous investigations on Prostaglandins are turning up new facts about them. One interesting report is by Andre Robert in "Gastroenterology" entitled "Cytoprotection by Prostaglandins" (Gastroenterology, Volume 77, page 761, October, 1979). The about 20 varieties of Prostaglandins are variants of a family of chemicals characterized as 20-carbon oxygenated, fatty acids. The thrust of Robert's work pertains to a characteristic of Prostaglandins known as cytoprotection.

Gastric cytoprotection was demonstrated using drugs known to injure gastric mucosa especially the anti-inflammatory, non-steroidal drugs such as are used in rheumatic diseases. Prior treatment with Prostaglandins prevent necrosis, bleeding, and ulcers. Prostaglandins are more effective than a combination of Cimetidine and Probanthine. This has been proved in laboratory animals and humans. Despite the absence of gastric injury when Prostaglandins are used with anti-rheumatic drugs — the anti-rheumatic effect persists. It is of particular interest that Prostaglandins are cytoprotective without inhibiting the outpouring of hydrochloric acid. Conversely, anti-secretory drugs which virtually inhibit hydrochloric acid do not afford cytoprotection against certain gastric noxious agents as ethanol, for example.

Intestinal cytoprotection is not produced by antihistamines, anti-cholinergics, or antacids according to Robert. The anti-rheumatic type drugs produce small intestinal ulcerations, which may even perforate. Certain Prostaglandins inhibit this reaction in the small bowel. One Prostaglandin is reported to prevent a Crohn's-like lesion of the terminal ileum produced by pred-

nisolone — in rat experiments. Robert states that most Prostaglandins have cytoprotective value for the stomach and intestine, but they vary in their potency.

The mechanism of cytoprotection is not certain. Robert says that Prostaglandins derive from arachidonic acid via an intermediate stage Prostaglandin endoperoxide and thence to Prostaglandins of different types. This is under the effect of an enzyme, cyclo-oxygenase. The anti-rheumatic drugs tend to inhibit this enzyme producing Prostaglandin deficiency. This may permit the cytotoxic injury — deficiency of Prostaglandins. In short, Prostaglandins are necessary for mucosal cells to remain intact in the presence of certain noxious agents. Prostaglandins are not depleted in experiments using ethyl alcohol on the stomach, yet they protect the stomach cells if given in above-normal amounts. Prostaglandins are apparently formed in the stomach — and in the intestine — in Robert's opinion; it is postulated that under normal conditions they are continuously being formed. Five possible modes of action for cytoprotection are suggested: Stimulation of mucus secretion, alteration of sodium pump, activation of adenylyl cyclase, circulatory effects, so-called protection of gastric mucosal barrier. The cytoprotection of Prostaglandins has been shown to be protective if given before the noxious agent; it has not been proved to be effective after the tissue injury but it might stop further injury. Further, no information is available, according to Robert, which indicates Prostaglandins give cytoprotection to epithelium outside the gut.

Another interesting effect of Prostaglandins is the modulation of the renin-angiotensin aldosterone system. This has been the subject of a study

by Campbell, Gomez-Sanchez, Adams, Schmitz, and Itskovitz (*Journal of Clinical Investigation*, Volume 64, page 1552, December, 1979). As is well-known, antiotensin renin and aldosterone have inter-related functions which determine levels of certain body salts and fluids; the relationships are disturbed in certain types of high blood pressure — and for this reason, as well as the purely physiologic relationships, the renin-angiotensin-aldosterone axis has been the goal of many investigative studies. Campbell, et al, using rats as subjects, the reviews of other investigators arrived at the following interesting conclusions.

Prostaglandin E1 and Prostaglandin E2 cause the release of Aldosterone. Prostaglandin F1a and Prostaglandin F2a ( on the other hand, tend to inhibit the release of aldosterone. They also conclude that Prostaglandins act in governing renins release; they share some control angiotensin II and III steroidogenesis; they counter the vasoconstrictive effect of angiotensin II.

The Prostaglandins are a remarkable group of chemical messengers. They have many varied functions, as noted above in some instances the functions of one Prostaglandin tends to oppose the function of another.



## "From Other Years"

From the University of Arkansas for Medical Sciences Library, History of Medicine, Archives Division.

*Journal of the State Medical Society of Arkansas*

Vol. 2 No. 5 November, 1891 p. 215

There has been a very heated controversy between the County of Pulaski and the City of Little Rock as to which corporation should bury the pauper dead in the city. There is not the slightest evidence of rivalry between the said corporations as to which shall preserve from death the largest number of sick paupers.

\* \* \* \*

A special telegram to the *Arkansas Gazette* recently announced the unanimous election of Dr. \_\_\_\_\_, first vice president of the Association of Railway Surgeons of Missouri, Kansas and Arkansas. It is hoped the association transacted some other business. "Railway Surgeons" from Missouri, Kansas and Arkansas would hardly go to Newport, Ark., just to elect a first vice president.

\* \* \* \*

The filtered water now furnished the citizens of Little Rock has one possible source of danger that it did not possess when it was so densely muddy — that is its partial clearness. Its former muddy appearance was so repulsive that it answered the purpose of a danger signal. Now that it is nearly clear and potable in appearance, there

is no telling what ills may result from its use. It was formerly muddy and *dangerous*; it is not now very *muddy*.

\* \* \* \*



### ANSWER—Electrocardiogram of the Month

DISCUSSION: The treatment would differ somewhat with one's assessment of the ECG. No P-waves can be clearly seen on this technically compromised trace, but the QRS complexes are narrow (0.08 sec.), regular, and rapid (270/minute), making this a supraventricular tachycardia. Two prominent possibilities would be atrial flutter with 1:1 conduction and W-P-W related arrhythmia. Interestingly, both lidocaine and Pronestyl may increase the refractory period in accessory pathways and may slow the tachycardia in Wolf-Parkinson-White related arrhythmia. Digoxin would be very useful in converting atrial flutter from 1:1 conduction to 2:1 or 4:1 conduction. Caunter-shack should convert either arrhythmia. This particular patient was treated initially with Inderal and Pronestyl because W-P-W was a strong consideration and he then exhibited atrial flutter with 2:1 conduction, implying that the strip shown represents atrial flutter with 1:1 conduction. The author's first choice for therapy would have been countershock in the situation described, but strong and rational reasons exist to support other therapeutic options.



## MEDICINE IN THE NEWS



### THE MONTH IN WASHINGTON

From now until mid-January the most-used word in the nation's capital will be transition. Reagan people—or allegedly Reagan people—will swarm about the town with knowing looks as to who's on first base, tapping briefcases bulging with position papers and bright new ideas for a brave new government.

To the purist, the word “interregnum” is preferable to “transition” in describing the Washington scene—for indeed there is an interval between two successive reigns, a suspension of administrative function.

Reagan said he wants his administration to “hit the ground running” when it takes office Jan. 20.

The selection of the cabinet dampened the fire of speculation about the tone and tenor of the incoming administration in this town that hasn't had any practice in dealing with a Republican from the conservative wing of the party.

Reagan has been supplied with detailed position papers on health policy from his advisory group for use in charting his administration's course next year. A transition team is working with President Carter and his aides on the transfer of power. The proposed federal budget for the fiscal year that starts next October is almost completed. And now the Reagan officials will have their whack at it. Usually a new administration doesn't do much tampering with the carryover budget.

In a move to lay the groundwork for early action, Reagan appointed six people to review the federal structure with an eye to lower level appointments and possible reorganizations. Elizabeth Dole, wife of Sen. Robert Dole (R-Kans.) and former member of the Federal Trade Commission, will handle human resources including the Health and Human Services Department, the Housing and Urban Development Department and the Department of Education.

Reagan has indicated opposition to the separate Department of Education that was established to

carry out a controversial campaign pledge by President Carter aimed at wooing the votes of teachers. And there has been renewed talk about reorganizing the HHS Department in order to put more emphasis on health and less on its welfare functions.

Reagan's advisory group, headed by William Walsh, M.D., president of Project Hope, has proposed a pool arrangement for private health insurance companies under which insurance would be made available to people whose disabilities make them uninsurable at present.

They would pay premiums which would be subsidized, if necessary, by the rest of the insured population.

Other recommendations included:

- Allowing Medicare-Medicaid beneficiaries to choose private coverage with premiums paid by the government.
- Examining the \$1 billion renal dialysis program to determine if services could be provided at less cost.
- Expanding home health benefits with an aim to reducing Medicare-Medicaid payments for hospital and nursing home care.
- Decentralizing health planning.

The thrust of the report toward easing federal regulation and encouraging a greater role for the private sector was mirrored in a report on health policies issued by the Heritage Foundation, a Washington, D.C., study group.

\* \* \* \*

The Heritage Foundation, a conservative think tank with strong ties to the Reagan administration, has come up with a blueprint for future government that includes some sweeping changes in health.

The Foundation calls for examination of methods of “phasing out Medicaid and Medicare in their present form, pursuant to the development of systems relying on ‘vouchers’ and a more competitive private market.”

Foundation President Edwin Feulner said the Foundation's “Mandate for Leadership” study, a

year in the making, is a basic set of conservative policy recommendations "which I hope the Reagan administration will give its careful and serious consideration." He said the study represents the collected opinions of more than 250 experts from government, universities, think tanks, and the business and legal professions.

The author of the report on the HHS Department was David Winston, an aide to Sen. Richard Schweiker (R.-Pa.).

The HHS section proposed a freeze on all HHS consulting contracts pending a full review of their usefulness, noting that the department "is very heavily dependent on such outside consultants."

It called for concentration on the role of HHS as a "last resort," while deregulating and enhancing the private sector's innovative capabilities."

Turning to the Health Care Financing Administration (HCFA) which runs Medicare and Medicaid, the report said HCFA has considerable difficulties managing fiscal intermediaries (e.g. insurance carriers) through which Medicare and Medicaid programs are administered. Furthermore, it finds it difficult to restrict health cost increases because of the retrospective, cost-based reimbursement system for these reasons.

Immediate examination of means to improve the administration of Medicaid and Medicare was urged. Containment policy should be turned away from a controls and guidelines approach to a process of reimbursement reform, deregulation, and improved competition, according to the study.

A significant recommendation was that "attention should be given, however, to the reduction or elimination of the Professional Standards Review (PSRO) program."

The Foundation study also noted that the National Institutes of Health have been criticized for duplicating work in the private sector. "Private organizations should be encouraged to carry out more development work, reserving NIH for areas with little commercial promise. Methods could be examined of altering the tax treatment of private research to encourage private involvement in more risky, innovative fields."

The report added that "bureaucratic problems of NIH might be reduced by strengthening the Director's authority to improve budgeting and planning, and by analyzing the cost structure with a view to reducing indirect costs." Another

significant proposal was for a thorough review of federal involvement with Health Maintenance Organizations (HMOs) with a possible six-month moratorium on all new program awards and extensions.

\* \* \* \*

House-Senate conferees have deleted from the Medicare-Medicaid amendments package a majority of the provisions that had been disputed by the medical profession.

The victory for the health providers was highlighted by elimination of the controversial Senate provision that would have restricted Medicaid beneficiaries' freedom of choice of institution by allowing states to specify which hospitals beneficiaries could attend.

Advocates of the provision had claimed that states could save money by channeling Medicaid patients to lower-cost facilities, but opponents, including the AMA, warned that such restrictions raised the spectre of a two-tier system of care.

The amendments constituted the health section of the budget "reconciliation" bill Congress has been working on in an attempt to bring federal spending in line with Congress' own, self-imposed budget limitations.

The conference committee's agreement on the total budget "reconciliation" was expected to clear the way for final Congressional approval. There had been a question whether Congress would be able to work out a compromise between House and Senate versions of the bill during the "lame duck" session, but the lawmakers were anxious to resolve their differences in order to avoid what would have been a shattering blow to the Congressional budget process through failure to act.

One of the major provisions removed from the Medicare-Medicaid list was the proposal for sweeping changes in the way Medicare reimburses hospitals. This was the heart of the long-standing plan by Sen. Herman Talmadge (D.-Ga.) to pay hospitals by groups, size and class on a prospective basis.

Another Talmadge provision dropped would have changed the criteria for determining reasonable charges for physicians' services and looked toward state-wide uniformity in fee allowances. This provision also would have restructured the payment basis for hospital-associated physicians.

A controversial, administration-supported pro-



vision to boost Medicare payments for Health Maintenance Organizations (HMOs) to 95 percent of the prevailing level was stripped from the measure.

Hospitals won their fight against a cost-cutting amendment that would have eliminated the current Medicare 8.5 percent differential payment for nursing costs.

The conferees also abandoned a proposal for liberalized conditions for reimbursement for chiropractic services, and voted down a provision for expanded payment for community mental health centers.

\* \* \* \*

The AMA has taken strong exception to two draft documents on health planning and has asked Health and Human Services Secretary Patricia Harris to recall them immediately.

The documents outline standards and measurements to be used in evaluating Health Systems Agencies, State Health Planning and Development Agencies, and the Health Planning Program as a whole. While recognizing the need for federal monitoring of the program, the AMA said the two drafts "represent an unduly extensive imposition of federal standards on the health planning process."

The AMA pointed out that the proposed standards are derived from the 1978 National Health Planning Guidelines and the draft National Health Goals, neither of which yet has legal standing. "The wholesale incorporation of these guidelines and goals into a review system to establish norms, the deviation from which will subject an agency to sanctions, transforms the guidelines and goals into federally-mandated requirements."

The Association stressed that planning authority and direction should be focused at the local level and suggested that any future proposals be drafted to provide greater flexibility for state and local agencies in establishing indicators to measure their progress.

\* \* \* \*

Contending there is a "totally inadequate" national awareness of prescription drug abuse, the

Director of the National Institute of Drug Abuse (NIDA) warned the problem could reach the magnitude of alcohol and tobacco as health hazards.

Federal officials estimated seven million Americans use legal drugs for non-medical purposes. William Pollin, M.D., NIDA Director, said misuse of prescription drugs is insidious and shows no signs of decreasing.

Dr. Pollin spoke at a Washington, D.C., conference sponsored by the federal drug agencies in conjunction with the American Medical Association, the Pharmaceutical Manufacturers Association and the National Association of State Alcohol and Drug Abuse Directors.

Peter Bensinger, Administrator of the Drug Enforcement Administration, said 250 million to 300 million dosage units are diverted each year. "A few physicians and pharmacists interested in illicit gain have caused a major national problem," he said. Federal investigators found one physician making \$200,000 a month from dealing in prescription drugs illegally, he said. One physician's desk drawer contained more than \$1 million in cash.

The government officials conceded they could not accurately estimate how much of the problem stems from crooked physicians and pharmacists and how much from theft, from "professional patients," or other means.

Joseph Skom, M.D., Chairman of the AMA Committee on Dangerous Drugs, said the most important task is continuing medical education of physicians on proper prescribing. The overwhelming majority of the problem is caused by a "small majority" of physicians, Dr. Skom told the conference.

The AMA has drafted model state legislation to crack down on physician misconduct, he noted, with one-half of the states to date providing all or part of the recommended code. Dr. Skom pointed to a six-fold increase in disciplinary actions against physicians since 1971, suggesting that this has helped in the fight against prescribing abuse. The AMA believes in "firm prosecution" of guilty physicians, he said.

\* \* \* \*



# keeping up

## Category 1 Continuing Medical Education Programs Available in Arkansas

### TOPICS IN CHILD PSYCHIATRY —

#### "VULNERABLE CHILDREN AND YOUTH"

Presented by John Peters, M.D., *March 6, 8:00 a.m. to 5:00 p.m.; March 7, 9:00 a.m. to 1:00 p.m.*, Arkansas State Hospital Auditorium, Little Rock. Registration fee \$75.00. Nine and one-half hours Category I credit. Sponsored by UAMS.

### GASTROINTESTINAL RADIOLOGY

Presented by Wilma Diner, M.D., *March 7, 12:00 noon to 5:30 p.m.; March 8, 8:30 a.m. to 3:00 p.m.*, Americana Inn, Little Rock. Registration fee \$115.00 for physicians, \$25.00 for residents and interns. Ten and one-half hours Category I credit. Sponsored by UAMS.

### ACUTE RENAL FAILURE

Presented by Watson C. Arnold, M.D., National Kidney Foundation of Arkansas, *March 7, 7:30 a.m. to 12:00 noon*, Holiday Inn, Lake Hamilton, Hot Springs. Registration fee \$40.00. Four hours Category I credit. Sponsored by UAMS.

### SOUTHWEST ALLERGY FORUM

Presented by P. Martin Fiser, M.D., and Purcell Smith, M.D., *March 22-25, 8:30 a.m. to 12:45 p.m. each day*, Arlington Hotel, Hot Springs. Registration fee \$75.00 (tentative). Twelve hours Category I credit (tentative). Presented by UAMS.

### PSYCHOSOMATIC MEDICINE FOR THE FAMILY PHYSICIAN

Presented by Ben N. Saltzman, M.D., *April 11, 8:00 a.m. to 5:15 p.m.*, UAMSC, Education II Building, Room G-141B. Registration fee \$40.00. Seven hours Category I credit.

### ARKANSAS DERMATOLOGIC SOCIETY MEETING

Presented by G. Thomas Jansen, M.D., *April 25-26, 8:00 a.m.*, UAMSC Education II Building. Six hours Category I credit (tentative). Sponsored by UAMS.

### NEURO-OPHTHALMOLOGY CONFERENCE

Presented by John Shock, M.D., *April 27, 7:30 a.m. to 5:00 p.m.*, UAMSC Education II Building, Room 8121. Registration fee and hours of credit not determined at this time. Sponsored by UAMS.

### NEURO-OPHTHALMOLOGY CONFERENCE

Presented by Patrick O'Connor, M.D., *April 28, 9:00 a.m. to 12:00 noon*, followed by luncheon, Camelot Inn, Little Rock. This meeting is in conjunction with the annual meeting of the Arkansas Medical Society. Registration fee \$25.00 (covers attendance and luncheon). Three hours Category I credit. Sponsored by Arkansas Academy of Ophthalmology. Inquiries should be directed to James Landers, M.D., 500 South University, Little Rock 72205.

### RECURRING EDUCATION PROGRAMS

Unless otherwise indicated, programs are for one to two hours Category I credit.

#### EL DORADO — AHEC

*Pathology Conference*, second Tuesday, 12:30 p.m. to 1:30 p.m., AHEC.

*Chest Conference*, alternate Wednesdays, 12:30 p.m. to 1:30 p.m., Warner Brown Hospital.

#### FAYETTEVILLE — AHEC-NW

*Medical Teaching Conference*, each Saturday, 7:30 a.m., Washington Regional Medical Center.

#### FAYETTEVILLE — VA MEDICAL CENTER

*Radiology Conference*, March 5 and 19 and April 2 and 16, 1:00 p.m., Conference Room.

*Pathology Conference*, March 10, 1:30 p.m., and April 21, 3:00 p.m., Conference Room.

*Mortality Conference*, March 12 and April 9, 3:00 p.m., Conference Center.

#### FORT SMITH — AHEC

*Tumor Conference*, every Tuesday, 12:00 noon, Fourth Floor Conference Room, Sparks Regional Medical Center.

As organizations accredited for continuing medical education by the Liaison Committee on Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.



**JONESBORO — AHEC-NE**

*Interesting Cases*, second and fourth Tuesday, 12:00 noon, Dietary Conference Room, St. Bernard's Regional Medical Center.  
*Tumor Conference*, third Tuesday, 12:00 noon, Dietary Conference Room, St. Bernard's Regional Medical Center.  
*Medical Lecture Series*, each Friday, 12:00 noon, Dietary Conference Room, St. Bernard's Regional Medical Center.

**LITTLE ROCK — BAPTIST MEDICAL CENTER**

*Pulmonary Care Conference*, each Tuesday, 12:00 noon to 1:00 p.m., Dining Room #4.  
*Central Arkansas Primary Care Conference*, second Tuesday, 7:00 p.m. to 9:00 p.m., Auditorium. Two hours Category I credit.  
*Cardiopulmonary Resuscitation Course*, second Wednesday, 6:00 p.m. to midnight, Human Resource Development Area. Six hours Category I credit.  
*Emergency Medicine Conference*, March 4, 18 and April 1, 15, 29, 12:30 p.m. to 1:30 p.m., Conference Room #1.  
*Morbidity and Mortality Conference*, first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.  
*Surgery Conference*, March 12, 19, 26 and April 9, 16, 23, 30, 8:00 a.m. to 9:00 a.m., Conference Room #1.  
*Anesthesiology Conference*, third Thursday, 7:00 a.m. to 8:00 a.m., Dining Room #3.  
*GI Roundup*, March 11, 25, 12:30 p.m. to 1:30 p.m., Conference Room #1.

**LITTLE ROCK — ST. VINCENT INFIRMARY**

*Interhospital GI Problems Conference*, first Monday, 6:00 p.m. to 7:30 p.m., Room E155, Education Wing.  
*Pediatric Conference*, first and third Monday, 12:30 p.m. to 1:30 p.m., Room E159, Education Wing.  
*Interhospital Urology Grand Rounds*, first Tuesday, 5:30 p.m. to 6:30 p.m., Room E159, Education Wing.  
*Peripheral Vascular Disease Conference*, third Tuesday, 6:00 p.m. to 7:00 p.m., Room E159, Education Wing.  
*Neuropathology Conference*, third Tuesday, 5:00 p.m. to 6:00 p.m., Room S1169, Laboratory.  
*Pulmonary Conference*, first and third Thursday, 12:00 noon to 1:00 p.m., Room E159, Education Wing.  
*Cardiology Conference*, second and fourth Thursday, 12:00 noon to 1:00 p.m., Room E155, Education Wing.

**LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES**

*Internal Medicine Grand Rounds*, each Tuesday, 8:00 a.m. to 9:00 a.m., Education 1 Auditorium.  
*Neuroradiology Conference*, each Wednesday, 4:00 p.m. to 5:00 p.m., Department of Radiology Conference Room.  
*Radiology Continuing Education Lecture Series*, two Wednesdays each month, 6:00 p.m. to 7:30 p.m., Department of Radiology Conference Room.  
*Categorical Course in Radiology*, each weekday except Wednesday, 4:15 p.m. to 5:00 p.m., Wednesday, 5:00 p.m. to 5:45 p.m., Department of Radiology.  
*Psychiatry Grand Rounds*, each non-holiday Thursday, 12:30 p.m. to 1:30 p.m., Child Study Center Auditorium.



## Announcement

Musculoskeletal Disease in the Primary Care Office. April 24-25, 1981.

At: The University of Texas Health Science Center at Dallas.

Presented by: Division of Orthopedic Surgery, Southwestern Medical School, The University of Texas Health Science Center at Dallas.

Fee: \$150.

Credit: 15 hours Category 1, AMA.

Contact: Division of Continuing Education, The University of Texas Health Science Center at Dallas, 5323 Harry Hines Blvd., Dallas, Texas 75235. Phone: 214/688-2166.

\* \* \* \*

Fourth Annual Update In Internal Medicine. May 19-22, 1981.

Zale Lecture Hall, Southwestern Medical School, The University of Texas Health Science Center at Dallas, Texas.

AMA accredited: Category 1 — 26 hours.

Wide spectrum of improved diagnostic and

therapeutic techniques for internists and family physicians. Presented by the Department of Internal Medicine, Co-Chairmen, Donald W. Seldin, M.D., and Norman Kaplan, M.D.

Information: Linda Spino, Ph.D., Division of Continuing Education, The University of Texas Health Science Center at Dallas, 5323 Hines Blvd., Dallas, Texas 75235. Phone: 214/688-2166.

\* \* \* \*

Title: The Multiply Injured Adult with Complex Fractures.

Date: May 7-9, 1981.

Location: Dallas, Texas.

Sponsor: Division of Orthopedic Surgery, Southwestern Medical School, The University of Texas Health Science Center at Dallas.

Accreditation: 16 hours, Category 1, Physician's Recognition Award of AMA.

Fee: \$250; Residents in Training, \$125.

Contact: Division of Continuing Education, The University of Texas Health Science Center at Dallas, 5323 Harry Hines Blvd., Dallas, Texas 75235. Phone: 214/688-2166.



## PERSONAL AND NEWS ITEMS

### **Chief of Staff**

Dr. Leslie Anderson of Jacksonville has been elected chief of staff at Rebsamen Hospital.

### **Stroke Unit**

The stroke unit at St. Joseph's Mercy Medical Center has been dedicated to the memory of Dr. Surinder Gupta, founder of the unit.

### **Rome Meeting**

Dr. Robert D. Piat of Jonesboro presented a paper on obese surgery patients with diabetes and hypertension at the Third International Congress on Obesity in Rome, Italy. While at the meeting, Dr. Piat was appointed to the American Society of Abdominal Surgeons.

### **Paper Presentation**

Dr. James Pappas of Little Rock presented a paper on "The Use of Septal Homograph Cartilage in Tympano Mastoidectomy for Attic Support" at the Middle Section meeting of the American Laryngological, Rhinological, Otological Society (Triological Society) in Oklahoma City.

### **Medical Staff Elected**

Dr. R. G. Burns has been elected Chief of Staff at St. Bernard's Regional Medical Center in Jonesboro. Other officers elected were: Dr. C. E. Gossett, vice chief of staff; Dr. R. O. Lawrence, secretary-treasurer; Drs. O. H. Clopton and Joe T. Wilson, members-at-large; Dr. R. W. Johnson, chief of medicine; Dr. E. W. Williams, chief of surgery; and Dr. J. T. St. Clair, chief of obstetrics.

### **Batesville Urologist**

Dr. Charles Henry Day, formerly of Tulsa, has opened his office for the practice of Urology in Batesville.

### **Hospital Officers**

Dr. John M. Farmer has been elected president and chief of staff of Magnolia Hospital. Dr. Charles Weber is the retiring president and chief of staff. Others who will serve are Dr. Frank Roberts as vice president and vice chief, and Dr. Robert Hunter as secretary-treasurer.

### **Triological Society**

Dr. H. A. Ted Bailey, Jr., presented a paper entitled, "Small Fenestra Stapedectomy" at the Southern Section meeting of the American Laryngological, Rhinological, Otological Society held in Fort Worth, Texas.

### **Dr. Harris Leaves**

Dr. Walter P. Harris has left practice in Dan-

ville to work as a civilian doctor with the United States Army in Fort Riley, Kansas.

### **Cancer Society Award**

Dr. Jean C. Gladden of Harrison was awarded the National Division Award by the American Cancer Society. Dr. Gladden was honored because of his active volunteer work with the Society which includes planning the first Arkansas-Oklahoma Cancer Forum for Physicians, assisting in professional and public educational programs, and his leadership in the Boone County Crusade for the Special Gifts Committee.

### **Dr. Raque Moves**

Dr. Carl J. Raque opened a private practice, the Arkansas Dermatology Clinic, P.A., in Suite 704 of the Doctors Building, Little Rock, in early February.

### **Reception**

A reception honoring Dr. Swan B. Moss of McGehee was given by the Desha County Hospital Auxiliary. Dr. Moss was honored for his forty years of service to the community.

### **Advisory Board**

Drs. James Pappas and H. A. Ted Bailey, Jr., of Little Rock were appointed to the American Hearing Industry Association Medical Advisory Board which held its first meeting in Chicago January 9th-11th.

### **Mountain Home Cardiologist**

Dr. Stacey M. Johnson, an internist and cardiologist, has opened an office in Mountain Home.

### **Dr. Lilly Chairs Committee**

Dr. Ken Lilly of Fort Smith has been appointed chairman of the Committee on Chapter Affairs of the American Academy of Family Physicians. The committee maintains relations and promotes point programs between the Academy and its chapters.

### **Dr. Williamson Elected**

Dr. John R. Williamson of El Dorado has been elected to the Board of Directors of the Exchange Bank and Trust Company in that city.

### **Dr. Thomas Speaks**

Dr. James Thomas, Commissioner of Mental Health Services for the State of Arkansas, was the keynote speaker at a tenth anniversary dinner for Delta Counseling and Guidance Center in Eudora.





## NEW MEMBERS

### **Dr. James R. McCoy**

Dr. McCoy is a new member of the White County Medical Society. He is an Orthopaedic Surgeon associated with the Searcy Orthopaedic Clinic, 910 East Race Street.

A native of Star City, Dr. McCoy attended the University of Arkansas at Fayetteville for his pre-medical education. He was graduated from the University of Arkansas College of Medicine in 1972. He was a family practice resident at the University for one year. From July 1973 until June 1976, he was a United States Naval Flight Surgeon. After his military service, he returned to the University of Arkansas for Medical Sciences for a residency in Orthopaedic Surgery. During 1979 and 1980, he was associated with the University, the Veterans Administration Hospital, and the Arkansas Children's Hospital as an Orthopaedic Surgeon. He was chief of Orthopaedic Surgery at the Veterans Administration Hospital and was an instructor in Orthopaedic Surgery at the University.

### **Dr. Stephen P. Johnson**

Dr. Johnson has been accepted for membership in the Washington County Medical Society.

He was born in Evanston, Illinois. He attended Lehigh University at Bethlehem, Pennsylvania, and the University of Arkansas at Fayetteville for his pre-medical education. He was graduated from the University of Arkansas College of Medicine in 1977.

Dr. Johnson served an internship and a residency in Internal Medicine at the University of Arkansas for Medical Sciences.

Dr. Johnson is associated with the Fayetteville Diagnostic Clinic, 675 Lollar Lane, specializing in Internal Medicine.

### **Dr. Malcolm L. Hayward, Jr.**

Dr. Hayward is also a new member of the Washington County Medical Society who is associated with the Fayetteville Diagnostic Clinic, 675 Lollar

Lane. He specializes in Internal Medicine, Oncology and Hematology.

Dr. Hayward was born in Pennsylvania. He attended Trinity College in Hartford, Connecticut, receiving a B.A. degree in 1968. He was graduated from Columbia University College of Physicians and Surgeons. Dr. Hayward received internship and residency training at Royal Victoria Hospital, Montreal, Canada, from 1972 until 1978. He was also in training at Dartmouth-Hitchcock Medical Center in Hanover, New Hampshire, during 1977 and 1978, followed by a Fellowship in Hematology/Oncology at Dartmouth. He served as an instructor in Medicine while at Dartmouth.

Dr. Hayward spent three years with the Indian Health Service at Tahlequah, Oklahoma.

He is a member of the American College of Physicians.

### **NEW INTERN AND RESIDENT MEMBERS**

The Washington County Medical Society has accepted six new members:

#### **Dr. R. Dale Clemens**

Dr. Dale Clemens is a graduate of the University of Arkansas College of Medicine. He is a second-year Family Practice Resident with AHEC in Fayetteville.

#### **Dr. Geoffrey Dunaway**

Dr. Geoffrey Dunaway is a Family Practice resident with AHEC in Fayetteville. He is a graduate of the University of Arkansas College of Medicine.

#### **Dr. William C. Kendrick**

Dr. Bill Kendrick, a graduate of the University of Arkansas College of Medicine, is a Family Practice resident at AHEC Northwest in Fayetteville. He has been at that location for two and one-half years.

#### **Dr. Michael D. Koone**

Dr. Michael Koone is a Family Practice resident at AHEC Northwest in Fayetteville. He is a graduate of the University of Arkansas College of Medicine.

#### **Dr. Danny L. Proffitt**

Dr. Danny Proffitt, a third-year Family Practice resident with AHEC Northwest in Fayetteville, is a 1978 graduate of the University of Arkansas College of Medicine.

#### **Dr. Terri Su**

A graduate of the University of California College of Medicine, Irvine, Dr. Terri Su is serving a Family Practice residency with AHEC Northwest in Fayetteville.

The Pulaski County Medical Society has added the following to its roll of courtesy members:

Dr. W. Allen Poe, a graduate of the Louisiana State University School of Medicine, who is an intern at the University of Arkansas for Medical Sciences.

Dr. Phillip R. Alston, a graduate of the University of Arkansas College of Medicine. Dr. Alston is a resident in Obstetrics-Gynecology at the University.

Dr. Neema A. Garst, a graduate of Christian Medical College of India, who is a family practice resident at the University of Arkansas for Medical Sciences.

Dr. Steven Garst, also a graduate of Christian Medical College of India and a family practice resident at the University of Arkansas for Medical Sciences.



## THINGS TO COME

### April 3-4, 1981

The annual spring meeting of the Arkansas Chapter, American College of Surgeons, will be held April 3-4 at the Arlington Hotel, Hot Springs. Dr. John Davis, Chairman of the Department of Surgery with the University of Vermont, will be guest speaker.

### April 26-29, 1981

Annual Session of the Arkansas Medical Society, Camelot Inn and Convention Center, Little Rock. Scientific program information to be printed in the March issue of the Journal.

### April 27, 1981

The Arkansas Chapter of the American College of Surgeons will hold a luncheon meeting on Monday, April 27, in conjunction with the annual meeting of the Arkansas Medical Society. Dr. Ken Mattox of Baylor University College of Medicine will be guest speaker.

### April 28, 1981

The Arkansas Orthopaedic Society will hold a luncheon meeting on Tuesday, April 28, in conjunction with the annual meeting of the Arkansas Medical Society. The annual business meeting of the Society will be held at that time.

### April 28, 1981

The Arkansas Society of Internal Medicine will hold its annual business meeting during a luncheon session on April 28 in Little Rock. Mr. Darryl Cardoza, Director of Component Society Affairs of the American Society of Internal Medicine, will be the luncheon speaker. A scientific program presented by residents at the University

of Arkansas College of Medicine will follow the luncheon.

### July 21-25, 1981

Annual Symposium on Contemporary Clinical Neurology sponsored by Vanderbilt University School of Medicine. Palmetto Dunes Hyatt Resort, Hilton Head Island, South Carolina. For further information, contact Mrs. Joan Sullivan, Department of Neurology at Vanderbilt, Nashville, Tennessee 37232.



## OBITUARY

### DR. JAMES W. BUTTS

Dr. James W. Butts, a life member of the Arkansas Medical Society, died August 28, 1980. Dr. Butts was born in 1892 in Searcy.

Dr. Butts was a graduate of Tulane Medical School in New Orleans. He had been a general practitioner in Helena and had served as Phillips County Coroner.

Dr. Butts was a veteran of World War I.

He is survived by two daughters.

### DR. MAC McLENDON

Dr. Mac McLendon died November 26th, 1980. He was born in 1889.

Dr. McLendon, a 1915 graduate of the University of Alabama, served a double residency in orthopaedics and war surgery at Bellevue General Hospital in New York. He had been a general practitioner in Marianna for 62 years and served as public health officer for Lee County



for forty years.

In 1974, the Marianna Chamber of Commerce named Dr. McLendon the Marianna Man of the Year.

He was a veteran of World War I and a past commander of the American Legion.

Dr. McLendon is survived by two daughters.

**DR. VIRGIL L. PAYNE**

Dr. Virgil L. Payne of Pine Bluff died December 12, 1980. He was born July 13, 1898, in Hot Springs.

Dr. Payne was a graduate of the University of the South at Sewanee, Tennessee. In 1924 he was graduated from the University of Tennessee College of Medicine in Memphis. He was a former football coach at Southwestern College of Memphis.

A board certified Otolaryngologist, Dr. Payne began practice in Pine Bluff in 1934.

Dr. Payne is survived by his wife, Mrs. Ella Payne, one son, and two daughters.

**DR. ALLEN R. RUSSELL**

Dr. Allen Russell died December 13, 1980. He was born February 14, 1902.

Dr. Russell was a graduate of the University of Arkansas at Fayetteville and the University of Arkansas College of Medicine. He trained in urology at Johns Hopkins University, Baltimore.

During World War II, Dr. Russell served with the Army Medical Corps in the Pacific Theater.

After retiring from the Army in 1945, Dr. Russell began practicing in Pine Bluff. He was a General Practitioner and Urologist.

Dr. Russell is survived by his wife, Mrs. Nina Turner Russell, and a daughter.



# THE JOURNAL OF THE Arkansas MEDICAL SOCIETY

March, 1981



Vol. 77 No. 10

FORT SMITH, ARKANSAS

105th ANNUAL SESSION  
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LITTLE ROCK CONVENTION CENTER, APRIL 26-29, 1981

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These current issues, involving patient compliance or dependency-proneness, should be given careful scrutiny, for they may impede my overall therapeutic usefulness. As you know, a problem almost always involves improper usage. When I am prescribed and taken correctly, I can produce the effective relief for which I am intended.

Amid all this controversy, I ask you to reflect on and re-examine my merits. Think back on the patients in your practice who have been helped through your clinical counseling and prudent prescriptions for me. Consider your patients with heart problems, G.I. problems, and interpersonal problems who, when their anxiety was severe, have been able to benefit from the medication choice you've made. Recall how often you've heard, as a result, "Doctor, I don't know what I would have done without your help."

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**Contraindications:** Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma, may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication, abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed, drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other anti-depressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported, should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

**Dosage:** Individualize for maximum beneficial effect. **Adults:** Anxiety disorders, symptoms of anxiety, 2 to 10 mg b.i.d. to q.i.d., alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. **Geriatric or debilitated patients:** 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) **Children:** 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

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NEWS—Our readers are requested to send in items of news, also marked copies of newspapers containing matter of interest to the membership.

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# Gonorrhea in Children

Betty A. Lowe, M.D.\*

Gonorrhea ranks first among reportable communicable diseases in the United States. From 1964 to 1973, gonorrhea increased 179 percent and in 1976 an estimated 2,700,000 cases occurred. Recognized as a sexually transmitted disease, most of this increase has been in the 15-24 year age group. What is not recognized is that gonorrhea has become a common infection in childhood. In 1975, 12,422 reported cases were less than 14 years of age and 5,750 girls missed school each day due to gonorrhea.<sup>1</sup> In Arkansas, 10,000 cases of gonorrhea were reported during 1978-79. 30.6% were from 15-19 years of age and 1.9% (190 cases) were under 14 years of age.\* Of 21 practicing Arkansas pediatricians responding to a questionnaire, six (20%) had treated gonorrhea in the previous six months. Nine of 13 cases were less than 10 years of age.\*\* A review of 100 cases of gonorrhea in children is presented.

### Method

To evaluate the clinical presentation and epidemiology of gonorrhea in children, 100 consecutive cases of culturally proven gonorrhea seen at Arkansas Children's Hospital Pediatric Clinic were reviewed. Arkansas Children's Hospital (ACH) Pediatric Clinic serves the central Arkansas area as a general pediatric facility available to children under 21 years of age regardless of financial ability. During a two-year period (July 1977 - July 1979), 69,730 visits occurred. Gonorrhea cultures (1,218) were obtained in 1.7% of all visits and were positive in 188 children (14.8%). Of these 188 cases, 100 consecutive charts were reviewed. Classification into four clinical categories (asymptomatic, uncomplicated, complicated and disseminated) as described by Litt, et al, was done and charts were also reviewed for source and method of acquiring infection.<sup>2</sup>

### Results

Review of 100 consecutive cases revealed two neonates, 20 children less than 10 years of age,

four children 10-12 years of age and 74 adolescents 12-20 years of age. (Chart I.)

Classification of the 100 cases by clinical presentation revealed the complete spectrum of gonococcal disease. (Chart II.)

Eleven of 59 teenage females (18.6%) presented with asymptomatic disease. Seven were seen for possible pregnancy, two were exposed to a sexual partner with gonorrhea, one presented with a question of sexual abuse and one had a buttock abcess. All had positive cervical or vaginal cultures with no symptoms.

Forty-eight children presented with uncomplicated disease. One neonate presented at nine days of age with purulent conjunctivitis and one, 16 days of age, presented with a scalp abcess. Twenty-three girls 1-12 years of age presented with purulent vaginal discharge (vulvovaginitis). One six-year-old girl presented with conjunctivitis and corneal ulcer. Two boys, ages 16 and 17 years, presented with scrotal ulcers and one had marked

CHART I.  
ARKANSAS CHILDREN'S HOSPITAL  
100 CONSECUTIVE CASES  
GONORRHEA

	No. Patients	Hospital Admissions	Male	Female
Neonates	2	1	2	
1-10 yrs.	20		1	19
10-12 yrs.	4	1		4
12-20 yrs.	74	4	15	59
TOTALS	100	6	18	82

CHART II.  
ARKANSAS CHILDREN'S HOSPITAL  
100 CONSECUTIVE CASES — GONORRHEA  
CLINICAL MANIFESTATIONS

	Asymp- tomatic	Uncom- plicated	Complicated	Dissem- inated
Neonates		2		
1-10 yr.		20		
10-12 yr.		4		
12-20 yr.				
Males (15)		13		2
Females (59)	11	7	36	5
TOTAL	11	46	36	7

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inguinal adenopathy. Thirteen adolescent males had urethritis with discharge and dysuria. Seven girls, ages 12-20 years, presented with cervicitis and/or vaginal discharge with no other complaints.

Thirty-six patients, all teenage girls, presented with complicated disease. Symptoms were abdominal discomfort, fever, lower abdominal pain, localized lower abdominal tenderness, adenexal tenderness or peritoneal irritation. All had positive cervical or vaginal cultures and responded to penicillin therapy. Clinical presentation in these girls was recognized as pelvic inflammatory disease (PID).

Seven patients (five females and two males) presented with disseminated gonorrhea (DGI). All had fever and migratory arthralgia for several days. All had definite arthritis at presentation. Arthritis was localized to one joint (knee or ankle) in five, but two girls had two joints involved. Tendonitis occurred in one girl. Characteristic hemorrhagic pustular skin lesions occurred in two. One 17-year-old boy with fever, chills, arthralgia, myalgia, arthritis and skin lesions developed aortic insufficiency secondary to endocarditis. Cervical cultures were positive in four girls, pharynx in one, and both boys had positive rectal cultures. Joint aspirate was positive in two, blood cultures in none. All had an elevated erythrocyte sedimentation rate.

Six of the 100 patients were hospitalized; four with DGI, one six-year-old with conjunctivitis and corneal ulcer and one neonate with neonatal ophthalmia. All were treated with penicillin as per CDC recommended treatment schedule.<sup>4</sup>

Veneral transmission was found in most patients. Of the 74 patients, 12 to 20 years of age; 57 of the 59 girls admitted to sexual activity, and one 13-year-old had been raped. Fourteen girls had been treated for gonorrhea previously and one girl was treated for her sixth episode. Of the 15 boys, three denied sexual activity: the two boys with scrotal ulcers and the boy with DGI (this boy had a positive rectal culture and homosexual activity was suspected).

Of the four girls ages 10-12 years, one was sexually active (three months post partum), one was a case of suspect child abuse, one girl, her sibling and her mother had positive cultures and in one, no exposure could be found.

Of the 20 patients, 1-10 years of age, eight had sibs or mothers with positive cultures. Five had

a definite history of abuse (known older male); one was raped, one eight-year-old male admitted to sexual play with sibs and in five no definite history of exposure was obtained. Two girls (ages three and four years) were treated for their second episode of gonorrhea.

Both neonates had received silver nitrate prophylaxis as newborns. One mother had a positive culture at delivery and was treated (the infant was not) and one mother had a positive culture at the time the infant was seven days.

### Discussion

*Neisseria gonorrhea*, an anerobic gram negative diplococci is quite fastidious and quite susceptible to drying. The human is the only known victim of gonococcal infection with the point of body entry being a mucosal surface (endocervi, urethra, conjunctiva, rectal crypts and pharynx). Basically sexually transmitted, local factors can modify the entry of the organism. Prepubertal girls have an alkaline vaginal pH which predisposes them to gonococcal vaginitis whereas during menses a mucous pH of 6.8 to 7 facilitates spread from the cervix to pelvic structures. The incubation period is usually 2-5 days (may be shorter or longer up to 40 weeks) with an inflammatory response at the point of entry. This inflammatory response will be followed in 1-2 weeks by fibrous tissue repair and possibly the carrier state.

Classification of disease presentation into four major categories is clinically useful. Complicated infection rarely progresses to a disseminated form. Disseminated gonorrhea is usually preceded by the asymptomatic state. Differences in bacterial virulence between strains may be responsible for causing different clinical forms of disease.<sup>3,5,6</sup>

**I. ASYMPTOMATIC:** Adult females with asymptomatic cervical infection are considered the major reservoir of gonococcal infection. Routine screenings of teenagers is not customary, but reported incidence of asymptomatic gonorrhea in teenagers range from 1.7 to 6.6%. McChesney, et al, found that 4.7% of teenage females in a Virginia C & Y project had asymptomatic gonorrhea.<sup>7</sup> Rectal infection (homosexual males and 40-60% of females with genital infection) and pharyngeal infection is generally asymptomatic although a spectrum of asymptomatic chronic tonsillitis, exudative tonsillitis, stomatitis and parotitis has been reported in children.<sup>8</sup> Eleven percent of the ACH cases were asymptomatic. All

presented with a history of sexual contact, question of pregnancy or abuse which prompted cultures. All of these cases were adolescent females.

**II. UNCOMPLICATED:** Uncomplicated gonococcal infection is localized to the site of entry and usually presents as urethritis in males, vulvovaginitis in the prepubertal female, cervicitis in the pubertal female and ophthalmia in the neonate. Forty-six percent of the ACH series had uncomplicated disease. The neonate with ophthalmia was readily recognized but the diagnosis in the neonate with a scalp abscess was made only by culture. All of the patients 1-10 years of age had uncomplicated infection: 18 females (prepubertal) had vulvovaginitis and one male had urethritis. The six-year-old with a corneal ulcer and conjunctivitis was diagnosed only after cultures were taken. The four girls ages 10-12 years also had vulvovaginitis. Thirteen teenage males had characteristic urethritis but the two males with scrotal ulcers were diagnosed only by culture. Seven of 59 teenage girls had localized cervicitis.

**III. COMPLICATED:** Complicated gonorrhea or spread of the infection from the initial site occurs approximately in 17% of untreated females. Predisposing factors leading to spread are changes in cervical mucous pH associated with menses and pregnancy. Salpingitis (acute, subacute or chronic) clinically occurs leading to symptoms of PID (fever, lower abdominal pain, peritoneal irritation) and results in sterility in 15-40% of the females with one infection.<sup>1</sup> In males, extension of the infection can lead to prostatitis and epididymitis. Thirty-six of the 59 ACH teenage females had complicated gonorrhea (pelvic inflammatory disease) frequently associated with menses or post partum. Symptoms and clinical findings were the same as in adult females.

**IV. DISSEMINATED:** Disseminated gonorrhea (DGI) is reported to occur in 1-3% in most studies and frequently follows asymptomatic rectal or pharyngeal infection. Certain strains of *Neisseria gonorrhea* are more likely associated with DGI. Knapp and Holmes found 89% of DGI in their series due to specific penicillin sensitive strains.<sup>6</sup> Dissemination occurs by blood stream invasion. During the initial bacteremic phase, patients have chills, fever, muscle pain and arthralgia. Blood cultures are positive. Skin lesions consisting of papules which enlarge into hemorrhagic pustular blisters occur in two out of

three patients. Following the bacteremic phase, arthritis, meningitis, endocarditis can occur. Localization in these sites may have to do with immune complex formation and inflammatory disposal of same. Walker found circulating immune complexes in 13 of 17 cases of DGI but only three out of 20 localized infection.<sup>9</sup> Seven ACH patients (five females and two males) presented with DGI. All seven presented in the second phase of disease with definite arthritis; two had classic hemorrhagic pustular skin lesions and all had negative blood cultures. Primary site cultures (cervix, four; pharynx, one; rectum, two) were positive and two joint cultures were positive.

Gonorrhea is basically a sexually transmitted disease. The increasing reported rate of infection in teenagers has been attributed to increased sexual activity in teenagers, homosexual activity and the current permissive medical environment where teenagers can be treated without parental consent. Increased awareness and documentation (reporting) may actually account for part of the reported increase. In the ACH group, 70 of 78 patients over the age of 10 years readily admitted to sexual activity. Homosexual activity was probably the initiating factor in three teenage males. In the preadolescent child, the question of the source and transmission of gonorrhea is more difficult. Non-venereal transmission by close contact with infected family members or fomites<sup>10</sup> has been reported but precocious sexual activity and/or child abuse has been implicated as the major mode of transmission. Branch and Paxton found 44 of 45 children ages 1-10 years had a history of some sort of sexual exposure. A high incidence of poor parent-child relationship, overcrowded homes, low socio-economic class and lack of knowledge of body function and proper hygiene was present.<sup>11</sup> In Folland's study of 73 cases under 10 years of age, 18 gave a history of sexual contact and child abuse was present in nine.<sup>12</sup> In the ACH group of 20 patients (1-10 years of age), five children gave a history of sexual abuse by a known older male and one was raped. One eight-year-old boy admitted to sexual play with siblings. Eight children had sibs or mothers with positive cultures. Whether they acquired their infection by "close contact" or were also incidences of abuse could not be ascertained. Both neonates acquired their infection from mothers actively infected with gonorrhea at delivery. Treatment of one mother at delivery and silver nitrate prophylaxis of the



infant did not prevent the infants from acquiring gonorrhea.

### Summary

One hundred consecutive cases of gonorrhea in children are reviewed. Seventy-four cases were teenagers but an incidence of 26% under 12 years of age emphasize the fact that gonorrhea is a common infection in all ages. A complete spectrum of clinical presentation was seen. Teenagers presented with all clinical manifestations of gonorrhea. An incidence of 18.6% asymptomatic disease in the ACH teenage females is a reflection of presentation and cannot be considered as a valid incidence of asymptomatic gonorrhea in Arkansas adolescents. Sexually active teenage females also presented with "classic" symptoms of PID as seen in adults. DGI occurred only in teenagers in our group but has been reported in neonates in the pre-antibiotic era.<sup>13</sup> The higher incidence of DGI in the ACH group than in reported groups may reflect an increased incidence of certain strains of *Neisseria gonorrhea* in the community or may reflect greater usage of ACH for serious illness. All of the ACH prepubertal patients presented with localized or uncomplicated disease. The prepubertal female with vulvovaginitis and the neonates with ophthalmia are readily recognized but unusual presentation such as scalp abscess, scrotal ulcers and corneal ulcers in older children will depend on culture for diagnosis. It would appear from this group of patients that breaks in the neonatal skin and moist genital skin can be infected by the gonococcus.

Sexual activity was the obvious mode of transmission in the teenage group and was admitted in 71% (70 teenagers and sexual play in one eight-year-old). Sexual abuse (including two episodes of rape) occurred in seven children but in 10 children (two neonates and eight, 1-10 years of age) close contact with mother and sibs with positive cultures occurred. Whether or not sexual abuse was present in these children is difficult to determine. Precocious sex play, poor hygiene and close family quarters may predispose to gonorrhea in the preadolescent child. Both of the neonates in this group were obviously exposed to mothers with active disease.

Several issues for further consideration are gained from this study. With the current level of sexual activity in teenagers and the known incidence of asymptomatic gonorrhea, routine gonorrhea cultures should be considered in all teen-

agers, especially those that are sexually active. Vaginal cultures done as part of a routine physical examination will detect asymptomatic cases.<sup>7</sup> Epidemiological survey of all cases of gonorrhea must be carried out. In the preadolescent child, sexual abuse must be considered. The differentiation between sexual and nonsexual contact in young children is difficult and only by comprehensive evaluation of the child's psychosocial environment can sexual abuse be ruled in or out. Although prophylaxis of newborn eyes is mandatory, it must be remembered that an infected mother may transmit infection to another site (vulvar area, broken skin) at delivery or by close contact and poor hygiene at home. Treatment of a mother with a positive gonorrhea culture at delivery is imperative but the infant must also receive systemic therapy. Public education including body physiology in school age children, family living, parenting and sex education for teenagers must be a major educational priority for our society.

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# Modern Management of Omphalocele and Gastroschisis

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The terminology and classification of congenital anomalies of the anterior abdominal wall have been elucidated during the past 25 years since gastroschisis has been distinguished from omphalocele. In 1949, Benson<sup>2</sup> suggested that the congenital defects in which the abdominal viscera herniate through a periumbilical portion of the abdominal wall into a sac composed of peritoneum and amniotic membrane be termed omphalocele. He distinguished omphalocele from hernia of the umbilical cord by the size of the defect, that is, hernia of the umbilical cord occurs through a defect of less than 4 cm and should contain only loops of small bowel. The term gastroschisis (from the Greek words *gastro* meaning belly and *schism* meaning separation) appeared in the literature until the mid 20th century as a term for what is now known as omphalocele or exomphalos. Moore and Stokes<sup>13</sup> in 1953 redefined gastroschisis as that entity in which the defect in the abdominal wall is extraumbilical in location with absence of a membranous sac.

The incidence of omphalocele is estimated to be from 1 in 6,000 to 1 in 10,000 births. Gastroschisis has been considered very rare in the past, but is now estimated to occur twice as frequently as omphalocele or about 1 in 3,000 to 1 in 5,000 live births. Whether this difference is due to a true change in incidence or because of enhanced recognition of the separate entity of gastroschisis cannot be accurately ascertained.

There is still controversy about the embryogenesis of gastroschisis and omphalocele. The main point of disagreement is whether these two anomalies represent slightly different manifestations of the same developmental defect or whether they are two separate entities. A small omphalocele or hernia of the umbilical cord is regarded as a product of failure of complete return of the intestines following the normal period of herniation of the midgut into the extraembryonic coelom during the 5th to 10th weeks of development. The frequent finding of Meckel's diverticulum attached to an omphalocele sac suggests delayed involution of the omphalomesenteric duct is a factor hindering normal return of the gut to the abdominal cavity.<sup>12</sup>

The embryogenesis of the large defects probably is a primary defect in closure of the ventral abdominal wall of the embryo. The closure of the body of the embryo is brought about by enfolding of the cephalic, caudal, and lateral folds which meet to form the umbilical ring. The cephalic fold is made from splanchnic and somatic layers. The former enfolds the heart and great vessels and encloses the foregut anteriorly. The somatic layer forms the thoracic and epigastric wall as well as the septum transversum which separates the midline thoracic and abdominal cavities. Incomplete development of the somatic layer results in a supraumbilical abdominal wall defect, a defect of the lower sternum, an anterior diaphragmatic defect, and a defect of the diaphragmatic pericardium. These combined somatic defects were initially described by Cantrell, Haller and Ravitch<sup>4</sup> and are termed Cantrell's pentalogy.

The caudal fold contains the hindgut which gives rise to the rectum, distal colon, upper anus and urogenital sinus. The splanchnic layer of the caudal fold encloses the hindgut anteriorly. The somatic layer, including the allantois, the anlage of the urachus, forms the hypogastric abdominal wall. Failure of either layer results in abdominal wall defects. Splanchnic layer deficiency results in partial agenesis of the hindgut while failure of both layers leads to a complex of anomalies which consists of imperforate anus, prolapsed terminal ileum, exstrophy of the bladder, a cecal opening, two appendices, and a hypogastric omphalocele — the vesico intestinal fissure. Failure of the somatic layer alone results in exstrophy of the bladder with a hypogastric omphalocele.<sup>9</sup>

The lateral folds form the lateral walls of the abdomen and ultimately contribute to the umbilical ring. Failure of normal fusion of the umbilical ring results in umbilical hernia or an omphalocele, depending on the magnitude of the defect.

The embryogenesis of gastroschisis is open to debate. Although Sherman<sup>20</sup> developed an experimental model of gastroschisis in rabbits, and Haller<sup>11</sup> developed a model in fetal lambs, embryologists have not produced unequivocal evi-

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dence of gastroschisis in early human fetal specimens.

Duhamel<sup>6</sup> postulated early teratogenic influences may prevent differentiation of the embryonic mesenchyme — the framework of the somatopleure. If failure of differentiation occurs, subsequent resorption of the unsupported ectoblastic layer of the somatopleure would result in deficiency of the ventral body wall. Shaw<sup>18</sup> feels gastroschisis results from rupture of the membranous cover of the umbilical cord, either during the normal phase (5th through 10th week of fetal life) or if rupture occurs at a later stage the defect must be a hernia of the umbilical cord. His concept includes an explanation of the almost universal right lower quadrant placement of the defect. The right umbilical vein involutes by the 4th week of gestation; it therefore lends no support to that side. He speculates that the sac remnants are not present because of in utero resorption of the minimal fragments that are present at that stage of development during which rupture occurs.

#### Clinical Features

Both conditions are obvious at birth, but the distinguishing features are not widely known. Omphalocele is characterized by a translucent, bilaminar, avascular membrane consisting of an internal peritoneal layer and an external amniotic layer (Figure 1). If the defect is small, the umbilical cord inserts into the apex of the sac, but with a large defect, the cord attaches inferiorly and the umbilical vein and arteries splay out over the sac. The sac begins as a translucent pliable, soft membranous structure. Within a few hours after birth, however, the membrane whitens and becomes opaque. After 24 hours the sac dries and fissures to permit bacterial invasion of the



Figure 1.  
Newborn with omphalocele; note the avascular membrane and the insertion of the umbilical cord into the apex of the sac.

peritoneal cavity. The sac may rupture causing evisceration, although surprisingly, obstetrical rupture of the sac is uncommon.<sup>15</sup> The appearance of the intestine may be similar to the thickened matted bowel seen in gastroschisis if the duration of in utero exposure is of sufficient length. However, this defect can be distinguished from gastroschisis because the missing abdominal wall centers over the umbilicus and remnants of the ruptured sac remain.

Additional congenital anomalies occur in 37 percent of a series reported by Moore.<sup>14</sup> Cardiac malformations were found in 20 percent of the infants with omphalocele and these appeared to be found more frequently with large omphaloceles. Tetralogy of Fallot is the most common cardiac lesion and one-third of the cardiac malformations fit the description of tetralogy. Both trisomy 13 and 16 are associated with omphalocele and cardiac malformations (Figure 2).

Omphalocele is associated with three specific syndromes: the upper midline pentalogy of Cantrell, Haller and Ravitch (sternal, ventral, diaphragmatic, pericardial and cardiac defects) (Figure 3); the lower midline syndrome (vesico-intestinal fissure) (Figure 4); and the Beckwith-Wiedeman syndrome (macroglossia, visceromegaly, and hypoglycemia) (Figure 5). One of these syndromes occurred in 10 to 50 percent of the series of omphalocele compounded by Moore.

In gastroschisis, the umbilical placement is normal and the intestines protrude through a right lower quadrant defect medial to the medial border of the right rectus (Figure 6). It is separated from the umbilicus by a small bridge of skin. No sac or remnants of sac are found. The herniated abdominal contents usually consist of small intestine only. In contrast, omphalocele



Figure 2.  
Newborn with trisomy 13, omphalocele, cleft lip and palate.



has protrusion of liver and bladder, and occasionally stomach. In gastroschisis, the herniated intestines are markedly thickened as a result of fibrinous response to an amniotic fluid serositis.

In comparison to omphalocele, only 18 percent of gastroschises have additional malformations and 78 percent of the additional malformations were intestinal atresias, as might be expected



Figure 3.  
Infant with Cantrell's pentalogy, manifest by a supraumbilical omphalocele. The left ventricular diverticulum may be visualized through the sac.



Figure 4.  
Neonate with vesicointestinal fissure; ruptured omphalocele sac located infraumbilically with prolapsed terminal ileum (I), exstrophy of the bladder (B), a bifid clitoris (C), and imperforate anus.



Figure 5.  
Child with macroglossia from Beckwith-Wiedeman syndrome, macrosomia and hypoglycemia are the other components of the triad. These children have a high incidence of infraumbilical omphalocele and a high propensity for Wilm's tumor.

(Figure 7). The intestinal atresia results from vascular compromise which occurs because of a volvulus or strangulation of vascular supply at the abdominal defect in utero. The shortened appearance noted in many patients with intestinal continuity is more apparent than real and reverses after the intestines are returned to the abdomen.<sup>23</sup> A low birth weight occurs in approximately 60 to 65 percent of the cases.<sup>16</sup> More importantly, the neonate with gastroschisis is hypo-



Figure 6a.  
Intact skin bridge (s) separating a normal umbilicus from the herniated viscera in a case of gastroschisis.

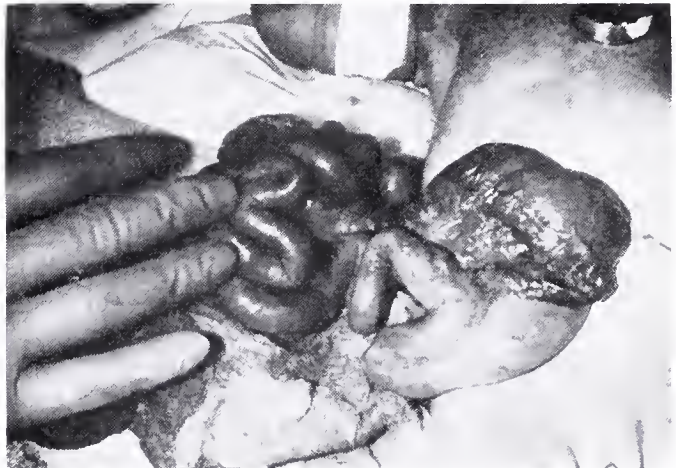


Figure 6b.  
Same patient: colon and small intestines are visible and the thickened matted bowel is apparent.



Figure 7.  
Small intestinal atresia is a patient with gastroschisis. Proximal (P) and distal (D) ends of the atretic.



thermic and hypovolemic due to the rapid heat and fluid loss from eviscerated bowel. Extraordinary fluid replacement is required during the first postnatal hours.

### Treatment

#### Preoperative treatment:

After an initial assessment, the baby's legs and trunk should be enveloped in a sterile intestinal bag or a plastic operative occlusion dressing. As Shelden<sup>19</sup> described in 1974, this protects the sac or exposed viscera from contamination and minimizes loss of fluid and heat. An additional advantage, of course, is that assessment of the eviscerated bowel is possible through the clear plastic bag.

If a small defect is present with compromise of the mesentery, an extension of the defect by a right lateral incision can be used to decompress the vasculature (Figure 8). To reduce drag on the mesentery the weight may be supported on bulky packs of warm, sterile saline soaked gauze placed within the bag.

Infants with gastroschisis require early intravenous cannulation to maintain effective perfusion volume. A rapid infusion of 20 ml/kg of 5 percent dextrose and Ringer's lactate should be given as soon as a reliable line is established. After the initial bolus, an infusion rate approximately four times normal has been required to achieve a urine output of 3 to 5 ml/kg/hr.<sup>8</sup>

Broad spectrum antibiotic coverage should be instituted immediately. Our current choices are gentamicin 2.5 mg/kg every 8 hours and penicillin 50,000 units/kg every 12 hours. A nasogastric tube should be passed to prevent vomiting as a consequence of the attendant ileus. Transportation in an isolette and careful atten-

tion to maintenance of ambient temperature in order to maintain a homeothermic state are essential (Figure 9).

### Operative Treatment

Complete primary closure, the optimal repair, may usually be affected in patients with small or medium sized omphaloceles, and in gastroschisis. If the liver is part of the herniated viscera, primary repair is not usually attainable. Frequently, complete repair during the initial procedure can be accomplished in patients with gastroschisis without inordinate viscerosabdominal disproportion (Figure 10). Helpful adjuncts to primary repair are a gastrostomy, irrigation of the bowel to strip the meconium from the small intestine and colon out of the anus, and manual stretching of the abdominal wall. If the herniated mass is large, and particularly when the liver makes up a part of the herniated mass, primary repair may be dangerous since abdominal visceral disproportion will cause unacceptably elevated intraabdominal pressures as the viscera are crowded into the abdomen. This results in diaphragmatic ele-

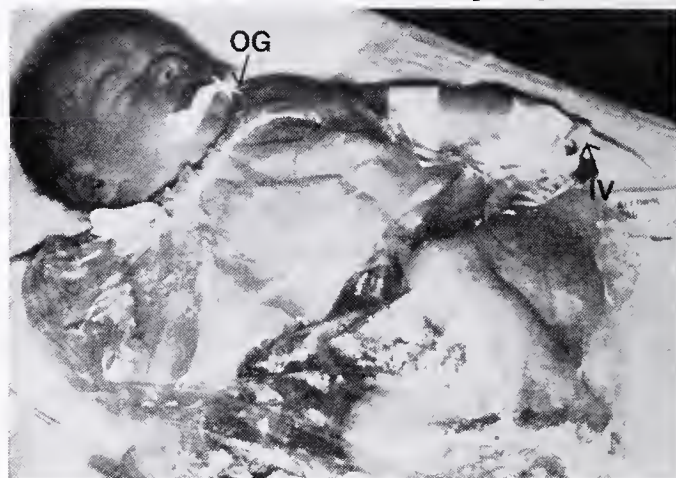


Figure 9. Infant with proper preoperative stabilization including intravenous fluids (IV), orogastric tube (OG) in place to prevent vomiting and consequent aspiration, intestine bag over trunk and legs to prevent contamination and minimize fluid and heat loss.



Figure 8. Gangrenous bowel secondary to either vascular compromise of the mesentery through a small abdominal wall defect of an infant with gastroschisis or experimental volvulus.



Figure 10. Same infant as Figure 9, following primary repair of gastroschisis with central line, gastrostomy and primary skin closure.



vation with concomitant severe respiratory embarrassment and inferior vena cava compression with reduced venous return, insufficient cardiac output, lower extremity edema, and even ischemic necrosis of the intestine or liver. In addition, extraordinary tension is placed on the suture line. To prevent these complications, Gross in 1948<sup>10</sup> described a two-stage technique for repair of large omphaloceles. In the first stage, he covered the amniotic membrane or herniated viscera with wide skin flaps including relaxing incisions laterally. No attempt was made to crowd the viscera back into the abdominal cavity (Figure 11). The second stage consists of correction of the large ventral hernia created at some later date, usually at age 1 to 2 years (Figure 12). Of course, the disadvantage of this approach is at the time of the secondary procedure, the herniated viscera still have not established a right of domain in the abdomen and there may be inadequate space for return. A pneumoperitoneum may be helpful in enlarging the space.

Numerous other procedures to treat a large



Figure 11.

Two-year-old child following first stage of Gross' technique for closure of large omphaloceles or gastroschisis at birth; large ventral hernia is obvious.



Figure 12.

Same child as Figure 11, following the second stage of Gross' technique for closure of large omphaloceles.

omphalocele and gastroschisis have been utilized for those lesions not amenable to primary repair. These range from splenectomy and right hepatectomy, certainly no longer advocated,<sup>3</sup> sigmoidotomy to evacuate the contents of the sigmoid colon and to decrease the size of the abdominal contents,<sup>5</sup> or more recently coverage with biologic dressing<sup>17</sup> or with an impermeable polymer membrane.<sup>7</sup> Nonoperative management has been recommended by numerous authors who use a variety of antiseptic or drying solutions to enhance eschar formation with subsequent cicatrization of the sac and abdominal wall defect. Mercurochrome is one substance recommended, but may be dangerous because of mercury toxicity.<sup>21</sup>

Schuster<sup>16</sup> reported use of prosthetic material to affect gradual reduction of the herniated contents into the abdominal cavity. A modification of this procedure by Allen and Wren is now one of the most widely accepted modifications.<sup>1</sup> A silicon rubber backed by nylon sheet is circumferentially sutured to the hernial margin. If an omphalocele sac is present, it is excised and a search made for other anomalies requiring correction. The abdominal wall is stretched manually to allow return of as much viscera as possible. Meconium is milked distally to decrease the size of the viscera being replaced. The silicon rubber sheeting is then fashioned into a sac and supported under sufficient tension to have continual reduction of the viscera as well as stretching of the abdominal wall (Figure 13). After 2 to 3 days and subsequently on a daily basis, the sac is compressed to return the bowel to the abdomen. A tie is then placed on the sac above the bowel. Using this technique, in 4 to 5 days the viscera are returned to the abdomen under no tension. Occasionally, as much as 10 days is required. If the longer interval is necessary, the likelihood of separation increases markedly. After reduction, the child is returned to the operating room and the abdominal wall is closed in layers (Figure 14).

At the time of the initial operation, a total parenteral nutrition catheter is placed and because prolonged intestinal dysfunction occurs and adequate maintenance of nutrition is essential to these babies' survival. The amniotic fluid bathes the intestines in gastroschisis and acts as a neurotoxin, thereby affecting gut motility.<sup>11</sup> Additionally, prolonged intestinal decompression is necessary; therefore, a gastrostomy is useful. If pri-



mary closure is not possible, a gastrostomy may be detrimental as it may enhance the risk of sepsis.



Figure 13.  
Infant with silon chimney (nylon net backed by silicon rubber) in place for gastroschisis in which primary repair was impossible.

Certainly if a gastrostomy is used, it should be placed as far laterally and superiorly as possible in order to prevent the risk of contamination as much as possible.

### Results

In contrast to historical perspective in which death occurred as a result of malnutrition secondary to inability to feed, the mortality with modern management of gastroschisis results from the primary intestinal atresia most frequently. At Arkansas Children's Hospital in the last three years there have been fourteen cases of gastroschisis. Ten of these survived without difficulties. Three of the four with intestinal complications

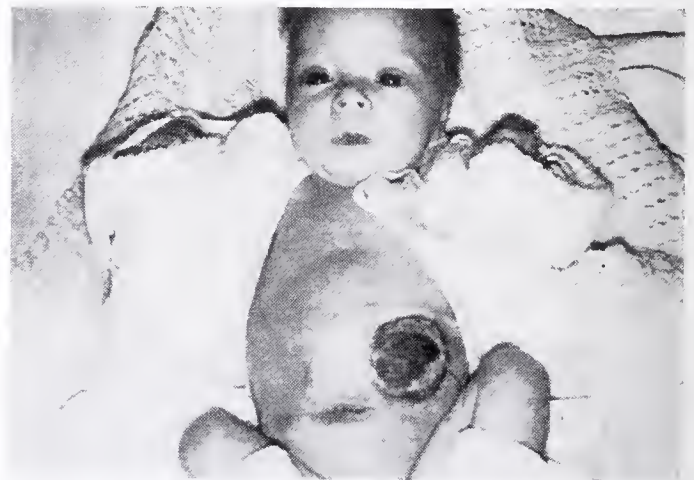


Figure 14.  
Infant in Figure 13 with primary repair of the abdominal wall following gradual reduction of the herniated viscera with the silon chimney. Gastrostomy tube has been pulled.

TABLE I.  
COMPARISON OF FEATURES OF OMPHALOCELE AND GASTROSCHISIS

	<i>Gastroschisis</i>	<i>Omphaloceles</i>
Sac	Absent	Sac present (either intact or remnants)
Defect	Usually small and to the right of the umbilicus	Includes umbilicus, may be very large
Hernia Contents	Consists usually of thickened matted small intestines only	May include most of the abdominal contents with normal visceral appearance with intact membrane
Associated Anomalies	Only 18% incidence associated malformations, mainly jejunoileal	37% incidence, including 20% with cardiac malformations
Birth Weight	Low in 67% of cases	Low in only 20% of cases
Syndromes	No	Cantrell's pentalogy, vesicointestinal fissure, Beckwith-Wiedeman syndrome, trisomy 18 and trisomy 13-15
Visceroabdominal Proportion	Normal	Abdomen very small and under developed with large lesions

resulted in death. In omphalocele the mortality results from the severity of the accompanying abnormalities. In a series from Canada reported by Stringel,<sup>22</sup> 67 percent of patients with omphalocele and 73 percent of patients with gastroschisis survived. Irving and Rickham<sup>16</sup> reported a drop in mortality from 40 to 26 percent in comparing the periods 1953-66 to 1967-75. They attributed their improved results to advances in pre and postoperative management, including preoperative fluid stabilization and careful attention to maintenance of temperature in combination with total parenteral nutrition postoperatively. These figures emphasize the importance of preoperative stabilization and referral to a tertiary care center experienced in the operative and long-term postoperative care of these difficult patients.

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# ANATOMY IN ARKANSAS' MEDICAL COLLEGE 1879-1979

## The History of a Department "By Whom"

Horace N. Marvin, Ph.D.\*

### PART IV OF IV PARTS.

#### (CONCLUSION)

##### Faculty

Interest in establishing a medical school first surfaced in 1870, but one of the essential provisions, legalized dissection, was not available. This was, however, corrected by the Arkansas General Assembly with enactment of legislation in 1873 authorizing certain state officials to release unclaimed bodies to regular practicing physicians for anatomical inquiry by themselves or a student under their direction. During the next six years, the obstacles created by medical politics, differing theories of medical practice, location of a school, and composition of a faculty were gradually resolved. This era has been described admirably by Baird<sup>6</sup> and will not be described further. Suffice it to say that the Arkansas Industrial University Medical Department was incorporated in September 1879, with eight incorporators who since have been known as founders, and who constituted the primary faculty for that first academic year. Of these eight, James A. Dibrell, Jr., was Professor of Anatomy, and continued in this role until 1904. Assisting Dr. Dibrell were two assistants, entitled Demonstrators in Anatomy. From that time forward there has been a succession of 92 faculty members, with tenures ranging from one to at least 38 years. The names of these people are arranged in Table 7 in a chronological series, with the year they were first identified as a member of the faculty preceding the name. Following the name, the year of termination of full-time status is given if that termination occurred prior to 1979. Also short biographical sketches, and when available, photographs are included. An effort was made to select photographs taken near the time when the individual actually was teaching. Considering the number of persons involved, it would be impractical to discuss each person in detail and, therefore, the comments will be general.

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In agreement with the Articles of Confederation of the American Medical College Association, the "medical members of the Faculty must be regular graduates or licentiates and practitioners of medicine, in good standing,"<sup>3</sup> and the eight founders of the Medical Department, by all accounts, met this qualification. All eight were graduates of then recognized medical schools, and all were men of distinction professionally in Little Rock. Only one, however, had ever taught in a medical school, and the others had only concepts developed as students to guide them as teachers. Believing in the old adage, currently presumed by some to be valid even today, that repetition is a key to learning, students were expected to attend two courses of lectures for each subject. The two courses were offered in successive years and, like the dinosaur with a brain in his head and one in his tail, if the student did not "get it the first time" he could get it the second. Both the first series of lectures in each course, followed by the repetitious second series, were required to be eligible to stand for the final oral examination. A vivid description of the student's view was given by Eugene H. Abington, M.D.,<sup>16</sup> who was enrolled for two years, 1893-95. "It was a small school, but we had a very good faculty. Dr. Dibrell was recognized as one of the finest anatomists of his time. Each student had to carry a number of courses. . . . the teacher lectured on a particular subject once or twice a week. We received from six to eight different lectures each day. Besides the classwork, we had a free clinic at the school. In those days, dissection material was hard to get, the laws were very strict, . . . . Bodies had to be accepted when offered, the year around, so there would be ample material on hand. These bodies were pickled to preserve them. We dissected only in the winter months. The unheated dissection rooms were always cold." Lectures, at least by some, were read verbatim from textbooks, and each week oral quizzes were given over work of the preced-

ing week. This procedure continued until the "three year graded curriculum" was instituted with the 1892-93 academic year.

The faculty teaching Anatomy in the early years were without formal training in the discipline. Other than a willingness and/or an interest in the subject, no criteria for selection of the individuals have been identified. Yet they were considered to be excellent and successful in their efforts (*vide supra*). A review of Table 7 and the biographical sketches, shows that many found roles as Demonstrators or Prosectors to be good entrances to the academic realm, after which they took places in clinical areas. One might surmise that the administration felt that candidates for clinical faculty positions would be well served to start where they felt students should, that is to "commence in the only practical method, and by dissection, fully and practically verify, . . . "7 Not only would such an experience serve as a review of basic medical knowledge, but the novitiate would be a good test of sincere commitment and ability. Whatever the circumstances, many with this start went on to faculty positions in all the clinical divisions of that day, and others directly into practice.

As in other facets of medical education, the Arkansas school awaited the spread of trends

from eastern schools with longer histories, experience, and perhaps especially finances. The recognition that teaching medical students demanded more than a preceptor-type commitment to the discipline came about first in the basic sciences, probably as a result of several forces. Research in eastern North America and in Europe vastly and rapidly increased the knowledge of basic science useful in the practice of medicine. The Flexner report exerted strong pressures to develop laboratory work in all basic sciences, which of course included Anatomy. And in more subtle ways, the youthful Association of American Medical Colleges served as a forum where curriculum, teaching methods, faculty performance, and many other problems of medical education were exchanged.

Charles Brookover was the first person without a medical degree to be appointed to the faculty, having instead both the Master of Science and Doctor of Philosophy degrees. Appointed in 1913 as Professor of Histology and Embryology, he continued until 1916. The second person with this background was Margaret Hoskins, who was appointed in 1921 as Professor of Microscopic Anatomy. She in turn resigned in 1925 to take a similar position at New York University College of Dentistry. Not until the appointment of

**TABLE 7.**  
**CHRONOLOGICAL LISTING BY DATES OF INITIAL APPOINTMENT**  
**OF FACULTY TEACHING ANATOMY**

1879 Dibrell, Jas. A. 1904	1910 Hodges, T. E. 1913	1930 Langston, W. C. 1957*	1960 Holland, R. C. 1966
Gibson, L. P. 1902	1911 Kory, R. C. 1913	Scott, J. O. 1932	McDonald, Zenas 1961
Jones, J. J. 1880	1913 Sciaroni, G. H. 1914	1931 Banks, Jeff 1957	1961 Latimer, H. B. 1962
1880 Waters, John 1886	Brookover, Chas. 1916	1932 Autry, D. H. 1934	1962 Gilmore, S. A.**
1887 French, F. L. 1913*	1914 Rhinehart, D. A. 1952*	Dean, G. O. 1949	1963 Wood, J. G. 1966
1890 Barner, W. B. 1891	1917 Gardiner, H. L. 1918	1934 Thibault, J. J. 1936	1965 Sharma, U. D. 1966
Miller, W. H. 1897	1918 Oates, C. E. 1929	1936 Bailey, R. J. 1942	1966 Powell, E. W.**
1896 Watkins, Anderson 1903	White, E. L. 1920	1937 Fletcher, D. E. 1944	Soloff, B. L.**
1897 Snodgrass, W. A. 1902	1921 Hoskins, M. M. 1925	1939 McCullough, A. W. 1961	1967 Pauly, J. E.**
1902 Dunaway, W. C. 1908	Hawkins, J. E. 1922	1941 Jernigan, J. P. 1946	Uyeda, C. K. 1972
1903 Lindsey, C. W. 1904	Wilson, P. L. 1926	1942 Marvin, H. N.**	McCoy, E. J. 1967
Sweatland, A. E. 1912	1922 Grayson, W. B. 1923	Ryerson, D. L. 1946	1968 Burns, E. R.**
Vaughter, S. P. 1911	Chandler, S. B. 1924	1947 Meschan, I. 1949	Buxton, D. F. 1972
1904 Carmichael, A. L. 1907	Wakefield, F. H. 1924	1948 Clausen, H. J. 1958	1969 Baccarini, I. M. 1972
Gray, Oscar 1907	1924 Taylor, Andrew 1925	Ferguson, J. O. 1949	Calhoun, J. D. 1973
1905 Ogden, M. D. 1907	1925 Jones, G. L. 1926	1950 May, L. C. 1950	1970 Skinner, R. D.**
Goodwin, Wm. 1908	Robinson, B. L. 1947	1951 Shaver, S. L. 1956	Scheving, L. E.**
Judd, O. K. 1910	1926 Gotcher, V. A. 1928	1952 Jaffe, C. O. 1956	Tsai, S. T.**
1906 Stewart, S. S. 1907	Rushing, G. S. 1929	1956 Aulsebrook, K. A. 1957	1971 Lucas, E. A.**
1907 Maxwell, R. L. 1911	1927 Shilladay, C. L. 1929	1958 Duffey, L. M. 1960	1972 Schoultz, T. W.**
Dibrell, J. L. 1916	1928 Henry, C. R. 1931	Sherman, J. K.**	Cave, M. D.**
1908 Kirby, H. H. 1918	1929 Bryant, R. L. 1932	Suzuki, H. K. 1970	1973 Kleiss, E. 1974
1910 Walt, D. C. 1911	Kitchen, D. K. 1930		1975 Boop, W. C.**

\*Continued past the date in emeritus status.

\*\*Active faculty 1979.



Ralph Bailey in 1936 did the Department of Anatomy again add anyone to its staff without a medical degree. Since then the faculty has been composed almost entirely of people with special training in both teaching and research in the anatomical disciplines. The year 1936 also marks another turning point because after that year nearly everyone held membership in the American Association of Anatomists, the primary professional organization for anatomists. Its requirements for membership include substantial evidence of capability in research as evidenced by publication of research papers in referred journals by the individual investigator.

Research and publications certainly have been a productive effort of the anatomy faculty since the medical school's humble beginnings. This occurred "notwithstanding the handicap of crowded quarters, obsolete buildings, and inadequate equipment,"<sup>17</sup> and one might add, no technical help. The preparation of a complete listing of the publications of the faculty must await another effort, but even if presently available it would exceed the scope of this paper. Fortunately the bibliographical Index Medicus had its birth the same year as the medical school, and a sampling of this index shows that at least certain members of the faculty were publishing. Because of the nature of the faculty, the publications prior to 1936 were almost entirely clinical reviews, epidemiological reports, and case histories. After that date, the faculty members were much more laboratory oriented, and the publications became more experimental rather than observational in nature.

Clinically related efforts were not excluded, however, and this reflects the splendid relationship between basic and clinical sciences which has characterized the medical school for the last forty years. As examples of such cooperative efforts at Arkansas, the following can be cited: one of the first studies of the effectiveness of testosterone in cases of inoperable carcinoma of the human breast was reported by a surgeon and an anatomist; a report of a thecoma in an infant girl by a pediatrician and an anatomist, the youngest infant reported to that date; and an anatomical basis for hemostasis following prostatectomy reported by an urologist and an anatomist. Most recently human sperm banking and the intensive study of chronobiological phenomena within the department have clinical applications. Indeed,

the importance of research and publication in the life of the department has rendered tenure and/or teaching effectiveness alone no longer sufficient to advance in academic rank.

Obtaining funds to support research has been one of the more perplexing problems facing faculty members in the past and also today. Little research remains that can be done with cost-free observation. The cost of essential equipment and supplies has increased incomprehensibly since the days when one built his own cages for animals and made his own slides. Outside funding is now a necessity, because it no longer is effective to bootleg a few dollars from the "maintenance budget" for research. The state funded budget never has provided funds specifically for research. Fortunately when critical it has been possible to pare some fringe benefits for research from the maintenance budget by getting double duty from some equipment; teaching *and* research. Over the years since 1930, active members in the department have been able to obtain research grants. These have varied from annual grants of about \$2,000 made to Drs. Langston and Robinson in the 30's, to over \$200,000 in recent years. The amounts have waxed and waned, sometimes less than, or equal to, or even substantially more than the state dollars provided for departmental use. Until 1965 all of the grants were made specifically for supporting research projects. In that year a five-year Anatomy Training Grant was obtained by the author to develop and support the training of graduate students as future career anatomists. The grant provided much needed equipment, but its success in increasing the output of trained anatomists was marginal. With more faculty in the department in recent years, and a higher percentage being successful grantsmen (and women), the annual amounts of grant funds have increased steadily. Several of the faculty members are engaged in chronobiological research, and the department has become one of the nationally recognized centers for this research. The fruits of this recognition can be seen in the awarding of thousands of dollars in grant support. Other projects in Neuroanatomy and Cell Biology also are well funded.

In another vein, students have been encouraged in their efforts to perform maximally in anatomical subjects for a great many years. Dr. James A. Dibrell successfully solicited William Thompson, a Little Rock practicing physician, to offer

an annual prize of twenty-five dollars to the first year student who wrote the best examination in Gross Anatomy. After Dr. Dibrell left the faculty, this award was renamed in his honor, and the award continued by James L. and John R. Dibrell. The faculty teaching anatomy presented annually a pocket case of instruments to the student for the best anatomical preparation. These preparations were used in instruction for a number of years, to the limit of their durability. The Demonstrator in Anatomy awarded ten dollars of his personal pocket money each year for the best over-all dissection by a student. All these awards were discontinued in 1914, the reason for their collective demise remains a mystery. Not until 1941 was scholarship again rewarded by the establishment of the Gross Anatomy Scholarship Roll by Dr. Jeff Banks when he became responsible for Gross Anatomy. The awardee was selected each year on the basis of the highest average for the course, and his name on a plate affixed to a plaque hung in the laboratory. After Dr. Banks' death, the award was continued by Dr. Howard Suzuki, the next course director, until 1968. No such awards have been made since that date.

The leadership of the department has fallen upon ten people over the one hundred years. When the school was first incorporated in 1879, individual departments were not defined, nor were they for some years. Following the traditional concept, however, the Professor was considered the most responsible person, functionally the chairman. On this basis, Professor James A. Dibrell served as Chairman of the anatomy faculty from 1879 until 1904. As discussed later, most of that time he was also President of the Faculty (Dean). Succeeding Dr. Dibrell was Dr. Frank L. French, who first joined the faculty in 1887 as Prosector in Anatomy. Later he was Professor of Materia Medica and Therapeutics before returning to teaching Anatomy in 1905 as the Professor and Chairman. In 1911, a few years before full retirement, Dr. French turned the Chairmanship over to Professor James L. Dibrell, son of James A. Dibrell, Jr. Dr. Dibrell resigned in 1916, and one can only surmise that he entered military service, as did so many others. For the interim period 1917-18, Dr. Darmon Rhinehart was enlisted until the Chairmanship was accepted by Dr. Oates who for several years previously had been teaching Chemistry and

Pharmacology. He was well liked by students and did much to enliven their lives by organizing and participating in a school band. His prestige with the Dean was not quite so good, and he was summarily replaced by Dr. Byron Robinson in 1929. In addition to holding a medical degree rather than a Ph.D., Dr. Robinson possessed personal attributes which attracted the attention of those charged with selecting a new dean to fill a vacancy in 1941. Consequently, Dr. Robinson moved full-time into the deanship that year, and Dr. W. C. Langston succeeded him as Chairman. During his tenure as Chairman (1941-57), Dr. Langston implanted research as a continuing function of the faculty. Later he accepted only a two-year appointment as Dean, and wisely only on an *acting* basis. When Dr. Langston was approaching the mandatory retirement age of 67, a search committee was appointed in January 1957, to nominate his successor. In a short while polarization developed between those who considered Dr. Jeff Banks the obvious next Chairman (Figure 33) and those who felt the next Chairman should have a demonstrated record in research. The tack was taken to solve the problem by splitting it. The department was split and Dr. Banks was named Chairman of the Department of Gross Anatomy. The search committee continued, and the author was appointed Acting Head of the Department of Microanatomy in July 1957. Following the death of Dr. Banks in September 1957, the divisions were quietly recombined and the search committee continued. In June 1958, the Dean announced that Dr. Mar-



Jeff Banks Student Union Building — Dedicated November 1959 to the Spirit of a Warm and Unforgettable Personality.

Figure 33.

By overwhelming demand by students and alumni, the new student union was named in honor of Jeff Banks, and this picture in the 1960 Caduceus recognizes this event.



vin had been appointed chairman. In 1965 he divided his time between the chairmanship and the office of Associate Dean, the latter being accepted full-time in 1967. Thereupon a new search committee, after sifting numerous nominations, selected Dr. John Pauly from Tulane University School of Medicine as departmental chairman, the position which he now holds.

The anatomy faculty has been called upon disproportionately to serve administrative roles in the medical school. Although entitled President of the Faculty, James A. Dibrell served in the role as Dean from 1886 through 1904, entering upon this tenure after seven years as Professor of Anatomy. Dr. Byron L. Robinson, Professor of Anatomy for the twelve years, 1929-1941, became Dean and held this position until 1946. Finally, Dr. W. C. Langston, who was Chairman of the Department of Anatomy from 1941 until 1957, with very great reluctance, accepted the additional responsibilities of Acting Dean, which he held concurrently from 1948 through 1950. Although discontinuous, these tenures account for 25% of the one hundred years. First appointed to the Admissions Committee in 1941, Dr. Jeff Banks became chairman of the committee in 1944 and held that responsibility until 1957. From 1965 until 1957, the author was Associate Dean for Academic Affairs, which included, among other responsibilities, the chairmanship of the Admissions Committee. This committee responsibility was carried until the Dean's Office staff was increased in 1973, and that responsibility came to lie elsewhere. This important committee function is truly burdensome and in many instances onerous, even though the committee itself is truly the decision making body. Still later, 1977, Dr. Ture Schoultz became Assistant Dean for Student Affairs, and the tradition continues.

### Staff

From time to time, help in the teaching program has been provided by student assistants when the faculty has been too few to provide for the number of students in the first year classes. These student assistants had completed at least their first year, and had demonstrated superior competence in Anatomy. A sophomore, junior or senior year would be divided in order to provide half time to assist in laboratory instruction, almost invariably in Gross Anatomy. For the department, this increased teaching strength; for the student assistant, it provided a source of some

much needed money, and an opportunity to fortify their knowledge. All but one completed the requirements for their medical degrees, and the one exception transferred to graduate school. Following are the names of the students and dates when so engaged:

Jasper E. Neighbors, 1915-17  
 Richard C. Dickinson, 1915-16  
 William E. Gray, 1916-17  
 Burdette M. Christianson, 1917-18  
 William E. Bell, 1917-18  
 Harry R. Allee, 1918-20  
 James F. Williams, 1920-21  
 Troy A. Shafer, 1933-35  
 John L. Ruff, 1935-37  
 A. Clayton Curtis, Jr., 1935-37  
 John P. Thompson, 1945-46  
 Harold E. Kennamer, 1945-46  
 William G. Lockhart, 1946-48  
 Archie L. Lester, Jr., 1946-48  
 J. Don Mashburn, 1950-52  
 James F. Doyle, 1950-52  
 James B. Ifwerstrom, 1950-52  
 Henry A. Lile, 1956-58  
 Curtis E. Ripley, 1956-58  
 James F. Rogers, 1956-58

A department of anatomy simply cannot operate without certain supporting personnel. How great this need is depends largely on the sizes of the classes being taught and the activity and productiveness of the department. In the early days, correspondence was hand-written without benefit of secretary or typewriter. This is attested to by class rosters, letters to applicants, and formal communications between members of the faculty, all hand-written. Student exam questions were written on the blackboard and were of the essay type which did not require much writing time by



Figure 34.  
 The January snow of 1949. From left to right: "Spider" McCullough, "Chief" Langston, "Cowboy" Clausen, "Jimmy" Ferguson, and "Our Friend" Banks. Taken on the roof of the McAlmont Building.

the faculty then, but lots of reading time later when the exams were corrected. The department had a typewriter but no secretary prior to 1941, such work being done by the departmental technician in addition to preparing slides. Mrs. Esther Long was the first secretary, and a series of secretaries has followed her in the Department of Anatomy. In 1972 additional need arose, and the number increased first to two, and more recently to four. Secretaries play a unique role in a department in addition to purely secretarial duties. Mrs. Wortham stands out in the author's memory because of her meticulous, dedicated efforts and her two sons, Drs. James T. Wortham and Thomas H. Wortham, both alumni of the Arkansas Medical School. Because of her perpetual good humor and enthusiasm, Jo Ann Mills, later Mrs. Barnes (Figure 35) contributed in two separated tours of duty to a generally pleasant atmosphere. Later Avon Story (still later Mrs. Crawford) is remembered because of her impact on one freshman class. As was customary, Dr. Langston introduced the departmental staff to that class on the first day. Avon was introduced and, smoothing down her sweater, she stood up very straight. Apropos to the moment, Dr. Langston, as was his style, said "Just a little ol' mountain gal doing the best she can with what she's got."

Because the University at Fayetteville had no need for a trained embalmer, no such title or position was permitted for the Department of Anatomy in Little Rock. And T. C. Carlson, Vice President for Finance there, seemed determined that there never would be. Consequently, there was a long series of poorly paid dieners, each one trained by Dr. Banks. Finally the position was established, and Mr. Emanuel Brooks

was appointed. He is remembered especially for his ambition and initiative, and for his bravery in rescuing his children from his burning home, an effort in which he was critically burned. He since has completed a master's degree in education, and currently is Director of the Coordinated Career Education Program in Little Rock. Succeeding him in 1965, Mr. Hosea Hardin, now a 15-year veteran, has become an invaluable member of the anatomy family. His ingenuity and "fix-it" abilities, and his hearty laugh, in addition to providing the laboratory material for Gross Anatomy, have made the department dependent upon his being there.

Two technicians have been identified with the early days of the department, Beulah Parker and Ann Weny, 1915-16 and 1917-20, respectively. They were succeeded in turn by Melba Garner who, when she joined the department in 1923, probably did not imagine that she would hold that position until she retired in 1972. That span of 59 years is presently the record for the greatest number of years of service in the department; probably in the institution. She served as histological technician, typist, secretary, social organizer, and listener/counselor to faculty, staff, and students as the occasion demanded. The thousands of histology slides she prepared over the years have been studied by thousands of students, and some of the slides certainly will continue into the next centennium. Her unswerving kindness in thought and deed were truly remarkable.

The story cannot be completed without including Mrs. Mary Turner. She joined the medical school in 1912 as housekeeping maid jointly in the Library and Department of Pathology, and transferred to the Department of Anatomy in 1935. In the middle 40's, to prevent losing her to the "housekeeping pool" which was being created by an administrative misarrangement, she was advanced in salary and rank to the position of Technician's Assistant by Dr. Langston, a position she held until her retirement in 1965. Everyone in the department was proud for Mrs. Turner. Her daughter became first a Histopathologic Technician at the medical school, then a trained electron microscopist in Boston with several co-authored papers to her credit, and finally a professional social worker with a master's degree. Mrs. Turner's grandson received his Doctor of Medicine degree from Arkansas in 1965, almost certainly under her watchful eye. He has since



Figure 35.

Mrs. Jo Ann Mills Barnes discussing departmental policy with a superannuated member of the department.



distinguished himself, most recently being the Chief of Urology at the Boston VA Hospital.

### Conclusion

In many respects, writing the conclusion to a paper such as this is the most difficult part. The present is the child of the past, and the future, the generations to be. It is very easy to take for granted what is, and to depreciate how it came to be. It is rather sobering, however, or should be, that after another centennial cycle they of that future time will look back with condescension on what we are doing now.

The participants in this history have been only custodians of a trust placed in them. The tax dollars supporting the enterprise were derived as sales tax from the meager incomes of the poorest share cropper or hill farmer, as well as corporate taxes on million dollar industry. In recognition of this, I dedicate this history to the Department of Anatomy, the department to the institution, and the institution to the source, the people of Arkansas.

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## BIOGRAPHICAL SKETCHES

### KENNETH A. AULSEBROOK

Born 10 December 1923 in Greenfield, Kansas, Dr. Aulsebrook received his bachelor's degree (1947) from Wabash College and a master's degree (1949) from the University of Wisconsin. He accepted an appointment as Assistant Professor of Zoology at North Dakota State College before completing all of his doctoral requirements. The degree was conferred later in 1956 by the University of Wisconsin. He was appointed Assistant Professor of Anatomy in 1956, a position he held until he transferred to the Department of Physiology in 1957. Dr. Aulsebrook's research was concerned with endocrine effects on sodium transport across synovial and intestinal membranes.

### DANIEL H. AUTRY

Dr. Autry was born 7 August 1908 at Booneville, Arkansas, obtained his premedical education at the University of Chicago with a bachelor's degree in 1930, and his medical training and degree (1934) at the University of Arkansas. During his junior medical year he was Assistant in Anatomy (1932-33), and during his senior year (1933-34) he held the rank of Instructor of Anatomy. He interned at Charity Hospital in New Orleans (1934-36), was a Fellow in Internal Medicine at the Mayo Clinic (1936-40), and served with the Army (1941-46). Dr. Autry was Instructor in Medicine (1946), Associate Professor of Medicine (1947), Associate Clinical Professor (1950), and Clinical Professor in 1956. He was board certified in internal medicine, specializing in cardiology until his recent retirement.

### IRACEMA M. BACCARINI

A native-born Brazilian, 29 June 1917, Dr. Baccarini received all of her professional education at the Faculdade de Ciencias Medicas de Minas Gerais in Brazil. In addition to a medical degree, she received a master's degree in Pathology and a Doctor of Philosophy degree in Obstetrics and Gynecology. After holding faculty appointment there, she became Assistant Professor of Anatomy at Arkansas in 1969 where she served until 1972. She returned to Brazil as Chairperson of the Department of Obstetrics at the Universidade de Brasilia. Dr. Baccarini published extensively in the field of anatomy and pathology of obstetrics

and gynecology. She was elected into the American Association of Anatomists in 1970.

### RALPH J. BAILEY

Born 2 December 1906 in Pittsburgh, Pennsylvania, Dr. Bailey received a bachelor's degree (1928) from the University of Pittsburgh. He then received a master's degree (1930) at the University of Wisconsin, stayed on as a Fellow (1931-32), and received his doctoral degree in 1932. He was an Instructor in Zoology at George Washington University 1932-34, Assistant Professor of Biology at Huron College 1935-36, and became Instructor in Anatomy at Arkansas in 1936. He was promoted to Assistant Professor in 1939, and resigned (1942) to enter medical school at the University of Chicago, receiving his Doctor of Medicine degree in 1943. He was certified by the American Board of Radiology, and has been a member of the American Association of Anatomists since 1940.

### JEFF BANKS

Born in Johnson, Arkansas, 2 July 1905, Dr. Banks completed his premedical preparation at the University of Arkansas. In 1931 he received a Bachelor of Science in Medicine degree at Arkansas' School of Medicine, and the Doctor of Medicine degree in 1934. He divided his junior year in order to serve as Instructor in Anatomy, a position he held from 1931 until 1935. He was promoted to Assistant Professor of Anatomy in 1935. During the year 1938-39, Dr. Banks held a faculty appointment at McGill University, and then returned to Arkansas as Associate Professor of Anatomy. In 1946 he was promoted to Professor, and in 1957, he was made Professor and Head of Gross Anatomy, a position he held until his death that year. Although not inclined toward research and publications, and not a member of the American Association of Anatomists for this reason, Dr. Banks occupied a unique position in the department as the best teacher and preceptor in its history.

### WILEY B. BARNER

Born in 1856, he received his medical degree in 1884 from Columbia College of Physicians and Surgeons. He was appointed Prosector in Anatomy for the 1890-91 academic year. Later he



taught Diseases of the Nervous System and Insanity during the Preliminary Fall Course of 1895-96. No other information has been found.

#### WARREN C. BOOP, JR.

A neurosurgeon, Dr. Boop was born 27 July 1933 in Baltimore, Maryland, and received his collegiate and medical training at the University of Tennessee. He completed both his residency training in Neurosurgery and the requirements for a master's degree at the University of Minnesota in 1964. He served in the Navy 1958-69, being head of the Neurosurgical Service from 1966-69 at the Great Lakes Naval Hospital. In 1970 he was appointed Associate Professor of Neurosurgery at Arkansas with joint responsibilities at the Little Rock Veterans Administration Hospitals. In 1975 he accepted an adjunct appointment as Assistant Professor of Anatomy. In addition to other medical societies, Dr. Boop is a member of the Harvey Cushing Society. Dr. Boop pursues an active program in clinical investigation and provides the clinical sector of the medical course in Neuroscience.

#### CHARLES BROOKOVER

The only information obtained concerning Dr. Brookover was the fact of his appointment as Professor of Histology and Embryology for the three academic years 1913-1916, and that he had been awarded bachelor's, master's, and doctoral degrees. He became a member of the American Association of Anatomists in 1915.

#### ROBERT L. BRYANT

Born in Oden, Arkansas, 13 March 1901, Dr. Bryant completed two years of premedical work at Southeastern State Teachers College in Durant, Oklahoma. After moving to Little Rock, he attended Little Rock College and Arkansas State Teachers College before entering medical school in 1926. After completing the first two years at Arkansas, he received a Bachelor of Science in Medicine degree in 1929. Thereupon he elected half-time medical school work for two years while holding an appointment as Instructor in Anatomy, and while a full-time senior student (1931-32) he served as Assistant in Anatomy. After receiving his Doctor of Medicine degree in 1932, he interned at St. Vincent Infirmary in Little Rock. He served in the Armed Forces in World War II, and settled in Arkadelphia, Ar-

kansas, where he practiced until his death 29 May 1955.

#### E. ROBERT BURNS

Born in Catskill, New York, 6 November 1939, Dr. Burns received a bachelor's degree from Hartwick College (1961), a master's from the University of Maine (1963), and his doctorate from Tulane University (1967). He completed a Post-doctoral Fellowship in Pathology at George Washington University before being appointed Instructor in Anatomy at Arkansas in 1968. Following promotions to Assistant Professor in 1969 and to Associate Professor in 1973, he received a five-year Research Career Development Award from the National Cancer Institute. Dr. Burns has publications in the field of cytopathology, and is joint author of a textbook. Currently his research is directed at the problem of the chronobiology of malignant cells. He is a member of the Southern Society of Anatomists, and was elected to the American Association of Anatomists in 1968.

#### DONALD F. BUXTON

Mansfield, Ohio, was the birthplace 30 May 1939 of Dr. Buxton who completed (1959) pre-veterinary preparation at Murray State College, received his Doctor of Veterinary Medicine degree (1963) from Auburn University, and his Doctor of Philosophy degree (1966) from the University of Florida. After a temporary appointment as Instructor and Research Fellow at the University of Florida College of Medicine, he was appointed Resident Instructor in Neuroanatomy jointly at the University of New Mexico and Holloman Air Force Base, 1967-68. At Arkansas he was Instructor in Anatomy (1968) and Assistant Professor of Anatomy (1969) until his relocation in 1972 to the College of Veterinary Medicine, Washington State University. Dr. Buxton reported on investigations of the comparative neuroanatomical aspects of mammals, and contributed portions to a multivolume text on primates.

#### JOSEPH D. CALHOUN

Born in Rayville, Louisiana, 31 March 1922, Dr. Calhoun received a bachelor's degree (1943) and a Doctor of Medicine degree (1945) from Tulane University. Residency training in Radiology was completed (1950) at the University of Arkansas with certification by the American Board





AULSEBROOK



AUTRY



BACCARINI



BANKS



BOOP



BROOKOVER



BRYANT



BURNS



BUXTON



of Radiology. Although in the private practice of Radiology since 1950, Dr. Calhoun also has been Radiologist for the Arkansas Children's Hospital, and Clinical Professor of Radiology in the College of Medicine. He was appointed Clinical Associate Professor of Anatomy (1969) in recognition of participation in the teaching of Radiographic Anatomy. This position he held until 1973, when he was forced to reallocate his time to his radiologic practice. Dr. Calhoun has published several papers in Clinical Radiology, and was elected into the Radiological Society of North America. In June 1974 he became one of a small group who have received the Distinguished Service Award of the College of Medicine.

#### AARON LEE CARMICHAEL

Born about 1878 in Missouri, he moved to Little Rock in 1900. He entered the medical school there immediately, and received his medical degree in 1904. He then was Assistant Demonstrator in Anatomy from 1904 to 1907, when he became successively Lecturer, Instructor, and Assistant Professor of Medicine (1907-12). Subsequently, he practiced in Little Rock until his death 28 August 1921, after a long illness.

#### M. DONALD CAVE

He was born 14 May 1939 in Philadelphia, Pennsylvania, and attended college at Susquehanna University, receiving a bachelor's degree in 1961. Graduate work at the University of Illinois led to master's (1963) and doctoral (1965) degrees. After one year as Instructor in Anatomy at Illinois, he spent individual postdoctoral years at the Genetics Institute in Lund, Sweden (1965-66), and at the Max Planck Institute in Tubingen, West Germany (1966-67). He was appointed Assistant Professor of Anatomy in 1967 at the University of Pittsburgh and Associate Professor of Anatomy at Arkansas in 1972. Dr. Cave has published extensively on nucleic acid synthesis and amplification of DNA. He is a member of the American Association of Anatomists (1967).

#### SIMON B. CHANDLER

A Kentuckian by birth, Dr. Chandler was born 13 February 1887 in Paintsville. He received his bachelor's degree in 1922 from the University of Missouri, and was appointed Instructor in Anatomy at Arkansas in 1922. In 1924 he enrolled at Northwestern University, receiving his master's

degree in 1926, and a Doctor of Medicine degree in 1927. From 1926 to 1930 he was Assistant Professor of Anatomy, and 1930 to 1935 Associate Professor of Anatomy at Loyola University (Chicago). In 1935 he relocated to West Virginia University School of Medicine as Professor of Anatomy, which he held until his retirement about 1957. Dr. Chandler was an active investigator of the parathyroid glands, and various topics and regions in Gross Anatomy. He was a member of the American Association of Anatomists from 1933.

#### HARRY J. CLAUSEN

Born in Clinton, Iowa, 18 October 1904, Dr. Clausen received a bachelor's (1926) and master's (1930) degree from the University of Iowa, and his doctoral (1932) degree from New York University. From 1932 he was Assistant Curator of Experimental Biology and Public Health at the American Museum of Natural History until 1937 when he was appointed Instructor in Anatomy at the University of Colorado. He was promoted to Associate Professor of Anatomy, which he held until 1946 when he became Professor and Chairman of Anatomy of the Loyola University Dental School (New Orleans). In 1948 he joined the faculty at Arkansas as Associate Professor of Anatomy. During the period 1950-57, he was Associate Professor of Anatomy at the University of North Dakota, but returned to Arkansas for the 1957-58 academic year. He resigned then to accept a position in the grants division of the National Institutes of Health. Dr. Clausen published substantially in the field of comparative endocrinology, and contributed sections to encyclopedias. He was elected a member of the American Association of Anatomists in 1941.

#### GILBERT O. DEAN

Dr. Dean was born in Springfield, Nebraska, 10 July 1910, and enrolled at the University of Arkansas for the three-year premedical preparation. Both the Bachelor of Science in Medicine and Doctor of Medicine degrees were conferred in 1935 by the University of Arkansas. During his junior year in medical school, Dr. Dean was Assistant in Anatomy 1932-33, and was appointed Instructor in Anatomy 1933-35 while a half-time medical student. After residency training in surgery at the University of Iowa, Dr. Dean was appointed Instructor in Surgery at Arkansas in

1941, but took a leave to serve in the South Pacific with the Navy. Upon his return in 1946 he became Assistant Professor of Surgery, and then the first full-time Professor and Head of Surgery 1947-49. During this later period he held an adjunct appointment as Professor of Anatomy teaching Surgical Anatomy. In 1949 he resigned to enter full-time practice of surgery in Little Rock, but continued to contribute as Clinical Professor of Surgery. He published the results of clinical surgical studies, with particular attention to the effects of thymectomy.

#### JAMES A. DIBRELL, JR.

A native Arkansan born 20 August 1846 in rural Crawford County near Van Buren, Arkansas, Dr. Dibrell studied first under his physician father and then at the University of Pennsylvania. Upon receiving his degree there in 1870, he returned to Little Rock to practice, and was one of the founders of the medical school in 1879. He was Professor of Anatomy 1879/1880, and then Professor of General, Descriptive and Surgical Anatomy 1880-1904. In 1887 he was elected President of the Faculty and served in this capacity until his death on 11 November 1904. At the Commencement of 8 March 1884 he was awarded an Honorary Doctor of Medicine, one of the few so recognized by the medical school. He was president of the Arkansas State Medical Society, and in 1902 was vice president of the American Medical Association.

#### JAMES LAMBERT DIBRELL

Born in Little Rock, Arkansas, 20 March 1880, Dr. Dibrell was educated in the Little Rock public schools, and completed his premedical preparation at the University of Arkansas, and entered medical school in 1900. Following graduation 8 April 1904, he spent a year in postgraduate training at the New York Polyclinic, and then returned to Little Rock permanently to practice. Prior to his appointments in the Department of Anatomy, Dr. Dibrell held appointments in Pathology, Dermatology, X-ray Therapy, and Electro-therapeutics (1905-07). He served as Demonstrator in Anatomy (1907-09), Professor of Anatomy (1909-11), and Chairman of the department (1911-16). For the year 1907-08 he held a joint appointment as Lecturer in Dermatology. He was a member of the state and county medical societies, and the American Medical Association.

He continued in practice until his death 2 July 1946.

#### LOWELL M. DUFFEY

Dr. Duffey was born in Seaman, Ohio, 25 October 1928, and received a bachelor's degree (1951) from Maryville College (Tennessee) and a master's degree (1953) from Kansas State College. Doctoral work was completed at Indiana University in 1958. During the academic year 1957-58, Dr. Duffey was Instructor in Biology at Lewis-Clark Normal School in Idaho before becoming Instructor in Anatomy at Arkansas in 1958. He resigned to accept a position at Birmingham Southern College in 1960. Dr. Duffey was an experimental embryologist, and published the results of studies on early stages of cardiogenesis. He became a member of the American Association of Anatomists in 1961.

#### WILLIAM C. DUNAWAY

A native Arkansan born on a farm in rural Faulkner County in October 1866, Dr. Dunaway received his early education in the county schools. Academic work at the University of Arkansas was followed by his medical education in the Kentucky School of Medicine in Louisville, and his medical degree in 1890. Practice was set up immediately in Bowie, Texas, but after only two years he was appointed Assistant Surgeon in the Arkansas State Insane Asylum. Two years later he entered the private practice of medicine. Between 1898 and 1900 he studied at the medical school under faculty direction for which he received "postgraduate" credit. In 1902 he was appointed Demonstrator in Anatomy and continued in this role until 1906 whereupon his title was amplified to include "Operative Surgery on the Cadaver." From 1909 until 1911 he was Professor of Gynecology and subsequently Professor of Medical Jurisprudence, 1911-1912. Dr. Dunaway practiced in Little Rock until 1934, and then in Pine Bluff for many years more.

#### JAMES O. FERGESON

A native Arkansan born 8 March 1923 in Havana, Dr. Fergeson completed three years of premedical preparation at Arkansas Polytechnic College and the University of Arkansas in 1942. The Bachelor of Science in Medicine and Doctor of Medicine degrees both were conferred by the University of Arkansas in 1945. He interned at





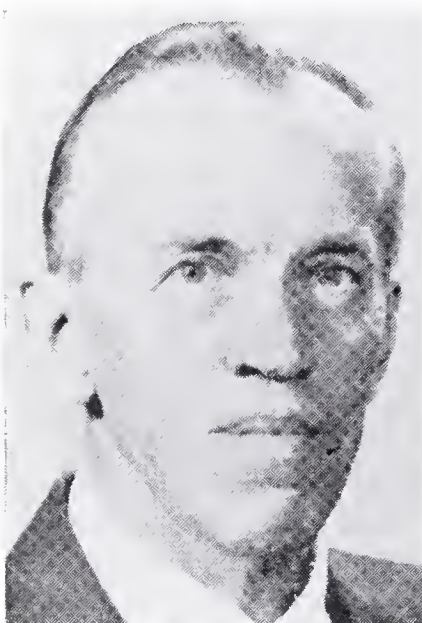
**CALHOUN**



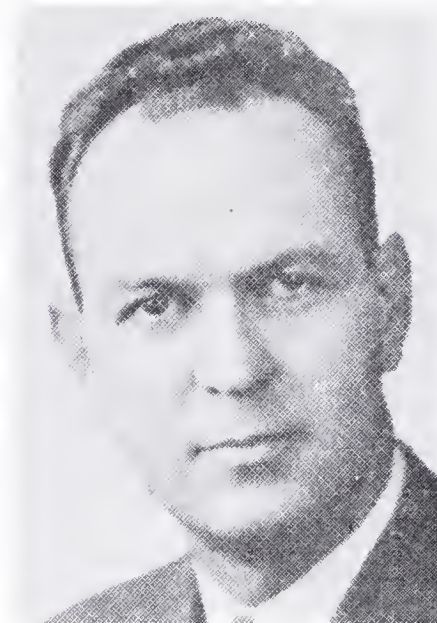
**CAVE**



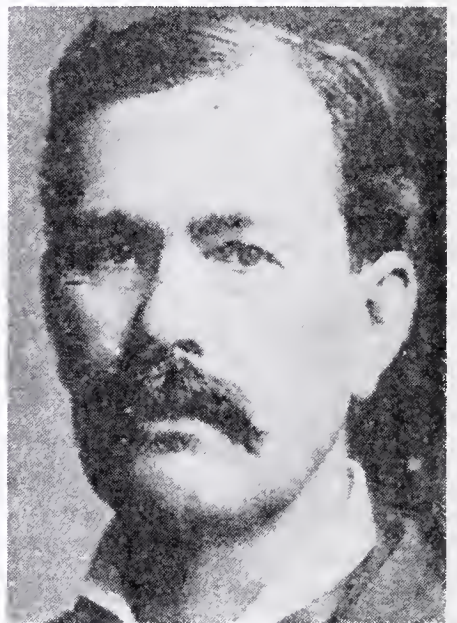
**CHANDLER**



**CLAUSEN**



**DEAN**



**J. A. DIBRELL**



**J. L. DIBRELL**



**DUFFEY**



**DUNAWAY**



the Missouri Methodist Hospital in St. Louis, Missouri, 1945-46, and served with the Army, 1946-48. Thereupon he was appointed Instructor in Anatomy at the University of Arkansas School of Medicine for the 1948-49 academic year. While in this position his interest in vascular surgery was stimulated by Dr. Langston, and residency training in this specialty later was completed at the Mayo Clinic during the period 1950-55. Since then he has been in practice in Sarasota, Florida. He is board certified in surgery, a Fellow of the American College of Surgeons, a member of the Board of the Mayo Alumni Association, and past president of the Priestley Society.

#### DONALD E. FLETCHER

Dr. Fletcher was a native of Idaho, born in Boise on 13 March 1906. His collegiate and graduate education was received at the University of Kansas: bachelor's (1931), master's (1932), and doctoral (1940) degrees. He was appointed Instructor in Anatomy at Arkansas in 1937, and became Assistant Professor in 1939. This position he held until 1944, at which time he resigned to complete the requirements for the Doctor of Medicine degree which he received in 1948. In 1948 he was appointed Assistant Professor of Pathology which he held until relocating in 1950. Since then he has been practicing pathology in Wichita Falls, Texas. Dr. Fletcher was interested as an anatomist in structural and functional interrelationships of the brain stem, and as a pathologist published subsequently in that field.

#### FRANK LUCAS FRENCH

A Minnesotan by birth, Dr. French was born at Centerville 27 October 1860. He moved later to Little Rock with his parents where he attended public schools. His premedical preparation was obtained at St. John's College and Bale Commercial College, and he enrolled in the Medical Department of the Arkansas Industrial College in 1879. While a medical student he was recognized on three occasions for his excellence as a student of anatomy. His medical degree was obtained 1 March 1882. He was appointed Prosector in Anatomy in 1887 and served in this capacity until 1890. No record of a faculty appointment was found for the ensuing five years until he became Professor of Materia Medica, Therapeutics, Hygiene and Botany, 1895-1899. He served a

one-year stint as Associate Professor of General Descriptive and Surgical Anatomy (1899-1900) prior to again participating in the general medical area (1900-04). In 1905 he became Professor of Anatomy, and later in 1913, Emeritus Professor of Anatomy which he held until his death 28 February 1927. He served also as Pulaski County Physician (1882-84) and City Physician and Health Officer (1885-90). He was on the staff of the Little Rock General Hospital and St. Vincent Infirmary, and held memberships in the county, state and national medical associations.

#### HENRY LAWRENCE GARDINER

Dr. Gardiner was born 11 May 1888 in Sunset, Louisiana. He completed his medical training at Tulane University School of Medicine in 1916, and continued on there another year as Instructor in Anatomy. He joined the faculty at Arkansas as Associate Professor of Anatomy serving only the one year, 1917-18, before entering military service in World War I. Upon returning from military duty, he settled in Crowley, Louisiana, where he practiced general medicine and surgery. He died 10 April 1966, just one month before receiving his 50-Year Graduation Pin. Among other recognitions, the Gardiner Memorial Stadium in Crowley was named in his honor.

#### LORENZO P. GIBSON

A native Little Rockian born 18 August 1855, Dr. Gibson received his public school education in Little Rock, and a bachelor's degree in 1875 from St. John's College. He enrolled initially in the Louisville Medical College, but obtained the bulk of his medical training and degree (1877) from Jefferson Medical College. Thereupon he set up medical practice in Little Rock and continued to practice actively until his death 29 December 1919. He was Demonstrator in Anatomy from 1879 to 1902, and also Adjunct Professor of Anatomy from 1893 to 1900. In each of the five years, 1892-1896, he participated in a one-month Special Fall Course as Professor of Minor Surgery and Bandaging. He was also City Physician, in which capacity he led the fight against yellow fever, surgeon for the railroad, and Secretary of the State Board of Health. He was a member of the Little Rock Medical Society, 1895-96 president of the State Medical Society, and vice president of the American Medical Association in



1890. He became involved in the competing College of Physicians and Surgeons during its existence from about 1905 to 1911, serving as its president. In addition to all of the above, he was editor of the *Journal of the Arkansas Medical Society* from 1880 to 1895.

#### SHIRLEY ANN GILMORE

Dr. Gilmore was born in Connellsville, Pennsylvania, 1 January 1935. Work for a bachelor's degree was completed (1957) at Thiel College, including a summer spent at the University of Michigan Biological Station (1956). The doctoral degree was conferred by the University of Cincinnati in 1961. In addition to being a predoctoral research fellow, Dr. Gilmore held a USPHS Postdoctoral Research Fellowship (1961-62) at the Institute of Anatomy of the University of Uppsala. At Arkansas she was appointed Instructor in Anatomy in 1962, and was promoted successively to Professor of Anatomy in 1975. Also she received the Distinguished Alumna Award from Thiel College that same year. Dr. Gilmore's research has been concerned with the histogenetic and reparative capabilities of the nervous system. Additionally, a large project concerned with effectiveness of learning aids in anatomy has been completed. Among other societies, she is a member of the Southern Society of Anatomists, and was elected a member of the American Association of Anatomists in 1964.

#### WILLIAM GOODWIN

A native Little Rockian born 26 July 1880, Dr. Goodwin obtained his premedical preparation at Bethel Military Academy in Virginia. He entered medical school in Little Rock in 1900, and completed the first two years on schedule. He then took a two-year leave before completing his junior and senior years. The Doctor of Medicine degree was conferred on 12 April 1906 by the University of Arkansas, and he interned (1906-07) at the Little Rock City Hospital. While a senior medical student and during internship he served as Prosector in Anatomy, and during 1907-08 as Assistant Demonstrator in Anatomy and jointly Assistant to the Chair in Bacteriology. For a three-year period (1908-11), he was Assistant in Clinical Microscopy and Bacteriology. Dr. Goodwin subsequently devoted full time to his growing practice, which he pursued until his death 9 May 1962.

#### VERNON A. GOTCHER

A Texan by birth, Dr. Gotcher was born 1 February 1901 in Cisco, and received a bachelor's degree (1924) from Mississippi College. He enrolled that same year in medical school at Arkansas, and received his degree in 1931. At the close of his sophomore year, he took a leave to serve as Instructor in Anatomy, 1926-28, and Instructor in Pathology, 1928-29. While enrolled as a junior medical student (1929-30) he was Assistant in Pathology, and then completed his senior year. He interned at the U. S. Marine Hospital in Norfolk, Virginia, 1931-32. He then served three years in the National Institutes of Health of the U. S. Public Health Service, was Assistant Professor of Pathology at the University of Georgia for two years, and then entered the private practice of pathology at St. Joseph Hospital in Lancaster, Pennsylvania. He died there 2 December 1938. Dr. Gotcher published research on clinical aspects of malignancies later in his career.

#### OSCAR GRAY, SR.

Born in Clarks, Columbia Parish, Louisiana, 19 September 1874. He attended Arcadia College in Arcadia, Louisiana, after which he qualified as a railroad telegrapher in Dallas, Texas, and later in Little Rock. While a telegrapher in Little Rock, he served a preceptorship in medicine under a physician, then completed the two-year program at the University of Arkansas Medical Department, receiving his medical degree in 1904. While serving a two-year internship at St. Vincent's Infirmary, and for one year more, he was Demonstrator in Anatomy (1904-07). Thereupon his interest and studies took him into Gynecology which he taught until 1920. While on the faculty and for years afterward, he also was in the private practice of Gynecology in Little Rock until his death 30 June 1948.

#### WILLIAM BANDY GRAYSON

Born 1 May 1897, Dr. Grayson received his medical degree from Tulane University School of Medicine in 1921, and served a one-year internship at Charity Hospital in New Orleans. Immediately thereafter he was appointed Instructor in Anatomy at Arkansas for one year (1922-23), and then Instructor in Chemistry and Instructor in Physiology/Pharmacology (1923-26). He then moved to McGehee, Arkansas, where he was Division Surgeon for the Missouri Pacific Railroad





**FERGESON**



**FLETCHER**



**FRENCH**



**GARDINER**



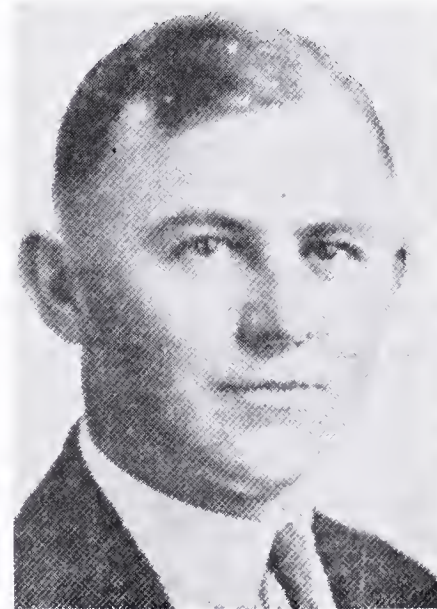
**GILMORE**



**GOTCHER**



**GRAY**



**GRAYSON**



**HAWKINS**



Hospital from 1926 to about 1932 when he returned to Little Rock. His activities in the State Health Department as Executive Secretary and State Health Officer for many years were coordinated with his teaching activities as Professor of Public Health and Hygiene which he held from 1932 until 1944. Subsequently he was first Assistant then Associate Professor of Medicine (1944-49), and then Associate Clinical Professor of Medicine until about 1962. He joined the staff of the Little Rock Veterans Administration Hospital and continued this affiliation until his death 22 July 1965. Dr. Grayson played an important role in providing exposure of students to public health, and nationally as president of the Association of State and Territorial Health Officers.

#### JOSIAH EDWIN HAWKINS

Born in Bayou Chicot, Louisiana, 12 July 1895, he received his premedical training at Louisiana College and his medical degree in 1921 from Tulane University School of Medicine. The following year he was Instructor in Microscopic Anatomy at the University of Arkansas School of Medicine, and according to his application for Arkansas licensure, was also "house surgeon." He then entered private practice in DeWitt, Arkansas, and after two years moved to Sanatorium, Texas. He died 12 September 1929 of tuberculosis in San Angelo, Texas.

#### CHARLES R. HENRY

Dr. Henry was born in North Little Rock, 2 December 1905, attended Little Rock College 1924-25, and completed his premedical training at the University of Arkansas 1925-26. After completing the first two years of medical school and receiving a Bachelor of Science in Medicine (1928), he took a leave of absence as a student (1928-29) to serve as Instructor in Anatomy. During the two years 1929-31, he was Assistant in Anatomy and completed the clinical years, receiving his Doctor of Medicine degree in 1931. He interned at Charity Hospital in New Orleans (1931-32), and at Women's Clinic in New York 1932-33. Residency training in Obstetrics and Gynecology was accomplished at Women's Clinic and at Polyclinic Hospital in New York, 1933-37. He returned to Little Rock to enter private practice, and was appointed successively Assistant Professor (1937), Associate Professor (1939), Professor and Head

(1943-47), and Clinical Professor of Obstetrics and Gynecology (1947). Dr. Henry has been active in clinical investigation, served as President of the Arkansas Medical Society, 1951-52, and Chief of Staff of St. Vincent Infirmary.

#### THOMAS E. HODGES

Dr. Hodges was born in 1859, and resided in Washington County, Arkansas. He graduated from the University of Arkansas in 1880 and entered the Medical department in advanced standing in 1884 from Boonesboro in Washington County, receiving his medical degree in March 1887. Nothing has been found concerning the period 1887 to 1909. He became Assistant in Materia Medica and Pharmacology (1909-10), and then Lecturer in Anatomy (1910-13).

#### ROBERT C. HOLLAND

Born 16 August 1923 in Bushnell, Illinois, Dr. Holland had his collegiate work interrupted by military service during which he qualified as a USAMC Medical Laboratory Technician. His bachelor's (1948) and master's (1949) degrees were obtained from the University of Wisconsin. He then became Instructor in Histology and Pathology at Northwestern University's Dental School (1949-51). He completed doctoral work (1955) at the University of Wisconsin, and was appointed Instructor and then Assistant Professor of Anatomy at the University of North Dakota (1954-60). He was then appointed Associate Professor of Anatomy at Arkansas, which position he held until 1966 when he became Visiting Professor of Anatomy at Mahidol University, Thailand, under Rockefeller Foundation sponsorship. Dr. Holland investigated the neural connections controlling neurohypophyseal activity. He has been a member of the American Association of Anatomists since 1960.

#### MARGARET M. HOSKINS

Born 19 December 1886 in Williamstown, Massachusetts, she received her bachelor's degree from Bryn Mawr in 1908, and her doctoral degree from Yale University in 1916. Dr. Hoskins then became successively Instructor in Histology at Yale University and Bellevue Hospital Medical College (1917-18), Instructor in Histology at the University of Minnesota (1920), Associate Professor of Histology and Embryology at the Medical College of Virginia (1920-21), and Professor

of Microscopic Anatomy at the Medical Department of the University of Arkansas (1921-25). She left Arkansas to become Assistant Professor (1925) and Associate Professor (1927) of Anatomy in the New York University College of Dentistry. Dr. Hoskins was active in research on the thyroid and parathyroid glands of rats and amphibians, and she was a member of the American Association of Anatomists from 1917.

#### CHARLES O. JAFFEE

Born in New York City, 26 September 1916, Dr. Jaffee received bachelor's (1946) and master's (1948) degrees from New York University, and his doctoral degree from Indiana University in 1952. He was appointed Instructor in Anatomy at Arkansas in 1952, and continued until 1956 when he resigned to enter medical school. After completing the junior and senior years, he withdrew to transfer to another medical school, but no record could be found that he received a degree. Dr. Jaffee's research was primarily in embryology with special reference to nephrogenesis. He became a member of the American Association of Anatomists in 1956.

#### JAMES P. JERNIGAN

Dr. Jernigan, born in Rector, Arkansas, 31 March 1914, attended first Jonesboro Baptist College and then Ouachita Baptist College, receiving a bachelor's degree from the latter in 1936. Both the Bachelor of Science in Medicine and Doctor of Medicine degrees were conferred in 1940 by the University of Arkansas. After internship at University Hospital in Little Rock, Dr. Jernigan was appointed Instructor in Anatomy in 1941. Almost immediately he was called into military service, but retained his faculty position until military discharge in January 1946. He completed residency training in surgery at Arkansas during the period 1946-50 and again was called into service from the reserves, serving until his death 14 September 1968. Dr. Jernigan published clinical reports in the surgical field, including one of the early reports on sickle cell anemia.

#### GRANVILLE L. JONES

A native Texan, born 26 January 1900 in Blooming Grove, Dr. Jones completed his pre-medical preparation at Texas Christian University, receiving a bachelor's degree in 1921. He

entered medical school at Arkansas as a resident of Little Rock, and after completing the first two years, took a leave of absence to serve as Instructor in Microscopic Anatomy, 1925-26. Upon completion of his junior year, he received a Bachelor of Science in Medicine degree (1927) and a year later his Doctor of Medicine (1928). He served two years as Intern at St. Elizabeth's Hospital (Washington, D. C.). Subsequently he spent two years with the Central New Jersey Mental Hygiene Clinics, 13 years as Clinical Director of the New Jersey State Hospital, 10 years as Superintendent of the State Hospital in Virginia, and five years as Superintendent of the Arkansas State Hospital and jointly Clinical Professor of Psychiatry at the medical school. In 1961 he returned to New Jersey, appointed successively at the New Jersey Neuro-Psychiatric Institute, New Jersey Drug Addiction Program, and as Clinical Director of the Fair Oaks Hospital until his retirement in 1977. He has been very active in public affairs, and has written numerous papers concerning mental health, drug abuse and psychiatric research.

#### JONATHAN JEFFERSON JONES

Dr. Jones was born in 1847 in Missouri and served in the Civil War prior to obtaining his medical degree in 1876 from the Missouri Medical College in St. Louis. He was one of the original faculty members when the Medical Department of the Arkansas Industrial University opened in 1879. He and Dr. Lorenzo P. Gibson were listed Demonstrators in Anatomy. Dr. Jones was not, however, reappointed, and became for a number of years a severe critic of the school. As Editor of the Arkansas Medical Monthly during its short lifetime, he used the publication to voice his personal feelings. Regardless of his motives, these criticisms did a great deal to expedite the development of the medical school. In 1906 he relocated to Philadelphia and then to Junkinstown, Pennsylvania, where he died 19 December 1932.

#### ORANGE KING JUDD

Born in Rantoul, Illinois, 21 March 1873, Dr. Judd moved to Little Rock after completing early schooling. He worked as a linotypist at the Arkansas Gazette while enrolled in the Medical Department, and received his medical degree in 1905. As a student in 1904, he won the Demonstrator's prize for the best dissection, and in 1905





**HENRY**



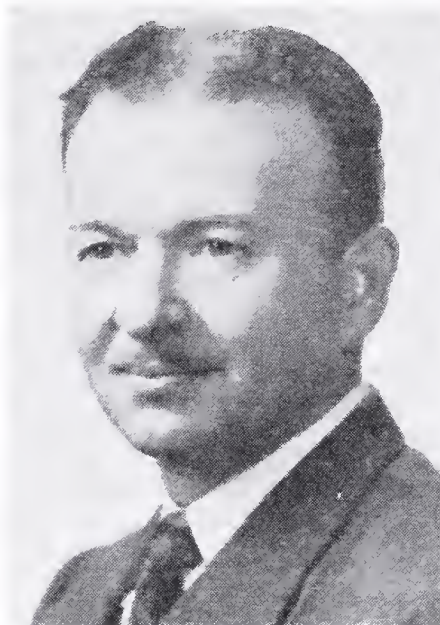
**HOLLAND**



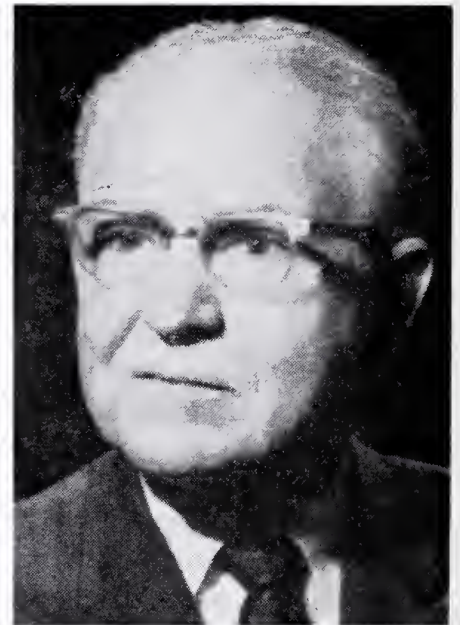
**HOSKINS**



**JAFFEE**



**JERNIGAN**



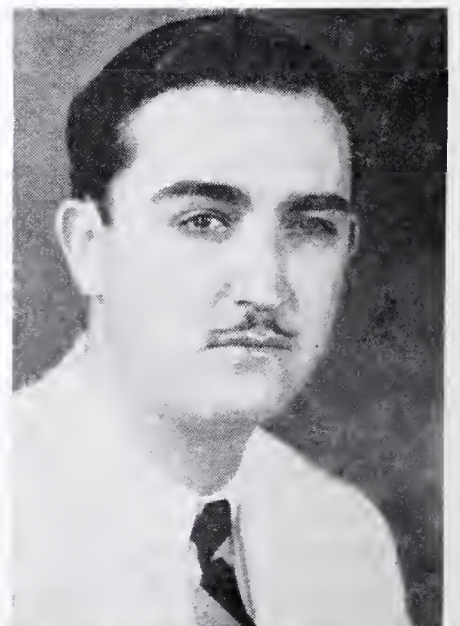
**JONES**



**JUDD**



**KIRBY**



**KITCHEN**



the State Medical Society's gold medal for the best over-all performance. He had postgraduate experience both at Johns Hopkins and at Harvard Universities. From 1905 he was successively Prosector, Lecturer and Professor of Anatomy until 1910, Professor of Medicine until 1920, and continued in private practice in Little Rock until his death 28 December 1958. He served as president of the Pulaski County Medical Society in 1908, and superintendent of the Logan H. Roots Hospital 1907-1912.

#### HENRY HODGEN KIRBY

A native Arkansan and the third generation to follow medicine, Dr. Kirby was born 28 October 1883 in Harrison. He completed his premedical preparation at Arkansas State University, and his medical schooling at Washington University, St. Louis, in 1906. He came to Little Rock to practice surgery, and in 1908 he was appointed jointly Assistant Demonstrator in Anatomy and Instructor in Dermatology. Successively he was Instructor in Dermatology and Embryology, Demonstrator in Anatomy, Lecturer in Surgical Anatomy, and jointly Associate Professor of Anatomy and Associate Professor of Surgery. Although no reference to military service was found, his tenure at the medical school was discontinued after 1918 until his appointment in 1921 as Clinical Professor of Gynecology which he held until his death 9 December 1922 at the age of 39 years. Dr. Kirby contributed numerous papers to medical journals, including one on inguinal hernia which was considered outstanding.

#### DELMAS K. KITCHEN

Although born in Benton, Arkansas, 16 November 1906, Dr. Kitchen entered medical school at Arkansas as a resident of El Dorado. He completed two years of premedical work at the University of Arkansas (1925-27), and additional credits (1927-28) at Hendrix College and Little Rock College, receiving a bachelor's degree from the latter in 1928. After completing his freshman year in 1928-29, he enrolled in the 1929 summer session at the University of Chicago for part of his sophomore subjects, and completed the sophomore year (1929-30) while serving also as Instructor in Anatomy. He completed his medical work on schedule with both the Bachelor of Science in Medicine and Doctor of Medicine degrees being conferred in 1932. After interning

at Gorgas Hospital in the Canal Zone (1932-33), he was in the private practice of medicine until 1936 when he joined Parke, Davis & Co. as clinical investigator, becoming assistant to the director (1942-45). In 1945 he joined Bristol-Myers Co., becoming vice president in 1948, and followed this with concurrent consultantships in the field of drug development. He has pioneered or been associated with much of the exciting developments in antibiotics, and their uses for controlling especially the treponemal diseases.

#### EKKEHARD KLEISS

Born in Vienna, 15 October 1918, he received his Doctor of Medicine degree in 1942 at Medizinische Fakultät der Universität Wien, and subsequently held academic appointments there and at Medizinische Fakultät der Universität Erlangen and Medizinische Fakultät der Universität München. In 1951 he became Professor of Anatomy and Embryology at the Facultad de Ciencias Medicas de Universidad de Los Andes in Venezuela; in 1959 he accepted the headship of the Department of Embryology there. Invitations throughout the world as guest lecturer and visiting professor have been numerous, including his visit of a few weeks at Arkansas in 1973-74 as Visiting Professor of Anatomy. Dr. Kleiss is a person of wide research interests including veterinary anatomy, teratology and stereology. In addition to membership in scientific societies of many countries, he has been a member of the American Association of Anatomists since 1954.

#### ROSCOE C. KORY

Born in Louisiana 15 October 1884, the son of German immigrants, Dr. Kory received both a bachelor's degree (1905) and a medical degree (1910) from Tulane University. After postgraduate work at the New York Eye and Ear Hospital, he came to Little Rock to set up practice. He was appointed first Professor of Pathology (1910-11), then successively Instructor in Histology and Embryology (1911-13), Instructor in Clinical Medicine (1913-14), Associate in Medicine (1914-17), Associate Professor of Medicine (1917-18), Associate Professor of Ear, Nose and Throat (1922-23), Associate Professor of Eye, Ear, Nose and Throat (1923-26), Associate Professor of Ophthalmology (1926-27), Professor of Ophthalmology (1927-47). Beyond this time he continued active practice until his death 28 September 1951. Dr.



Kory served as Captain in the Base Hospital at Camp Lee during World War I, service which only temporarily interrupted his practice and his service to the medical school. His publications were substantial and noteworthy in the field of his specialty.

#### WILLIAM C. LANGSTON

Dr. Langston was born in a rural area of Newberry County, South Carolina, 3 January 1890. He completed work for his bachelor's degree (1911) at Furman University. Thereupon he entered Bowman Gray College of Medicine, but withdrew within the year because of health. After teaching several places, he completed work for a master's degree at Middlebury College in 1917. He served in World War I with the Army, and after his discharge he studied a year at the Sorbonne. Upon returning to the States he studied medicine on a part-time basis, first at the University of Alabama and then at the University of Iowa where he completed the work in 1929. After one year on the faculty at Iowa, he was appointed Professor of Anatomy at Arkansas in 1930. In 1941 he became chairman of the department, a position he held until he became Emeritus Professor of Anatomy in 1957. During this time he served as Assistant Dean, 1946-48, and Acting Dean, 1948-50. His research activities were varied, including ocular damage and leucopenia from nutritional deficiencies, and the effects of estrogen on the female reproductive tract. He was a member (1948) of the American Association of Anatomists, and of other professional groups. He died 19 April 1977.

#### HOMER B. LATIMER

Dr. Latimer was born 2 March 1882 at Rock Creek, Ohio. He received his bachelor's (1907) and his master's (1908) degrees from the University of Minnesota. Interrupting his graduate studies, he was Professor of Biology at Charles City College (1908-10), Assistant Scientist with the U. S. Bureau of Fisheries (1910-11), Professor of Zoology at Nebraska Wesleyan (1911-16), and Professor of Anatomy at the University of Nebraska (1916-20). Taking a leave of absence from Nebraska, he returned to Minnesota for more graduate work, receiving the Doctor of Philosophy degree in 1921. He returned to Nebraska for several years, and then became Professor of Anatomy at the University of Kansas Medical School

in 1926, and Emeritus Professor in 1952. Still very active after retirement, he filled temporary vacancies at Missouri (1955-56) and Arkansas (1961-62). He became a member of the American Association of Anatomists in 1916, and was well known for his meticulous studies on quantitative anatomy during pre- and postnatal growth periods.

#### CALEB WRIGHT LINDSEY

Born about 1876, he entered the University of Arkansas School of Medicine in 1897 as a resident of Little Rock. He graduated in 1901, and served only one year, 1903-04, as Assistant Demonstrator of Anatomy. At the age of 29, he died 3 July 1905.

#### EDGAR A. LUCAS

A Hoosier by birth, 28 October 1931 in Franklin, Indiana, Dr. Lucas received both his bachelor's (1961) and master's (1965) degrees from Ball State University, and his Doctor of Philosophy degree (1972) from the University of California at Los Angeles. He joined the faculty at Arkansas in 1971 as Instructor, and since promotion in 1973 has served as Assistant Professor of Anatomy. Dr. Lucas is active in studies of the neurophysiology of sleep, and is publishing regularly the results of his work. He was elected into the American Association of Anatomists in 1975.

#### HORACE N. MARVIN

Born 20 April 1915 in Camden, Delaware, Dr. Marvin received a bachelor's degree (1936) and an honorary Doctor of Science (1969) from Morningside College. Both the master's degree (1938) and the doctoral degree (1941) were conferred by the University of Wisconsin. After a year in the Carnegie Institution's Department of Genetics, he was appointed Instructor in Anatomy at Arkansas in 1942. Except for the year 1948-49 at the M. D. Anderson Hospital, his tenure has been continuous. Appointed Professor and Chairman of Anatomy in 1958, he served until 1967 when he became full-time Associate Dean for Academic Affairs. He returned to full-time effort in the Department of Anatomy in 1977. He was Consultant in Radiopathology at the Los Alamos Scientific Laboratories in 1957, Fulbright Fellow to the University of Lagos School of Medicine (Nigeria) in 1963, and Commonwealth Fund Fellow in 1965. Dr. Marvin has published in the fields of endocrinology and hematology. He is a member





**KLEISS**



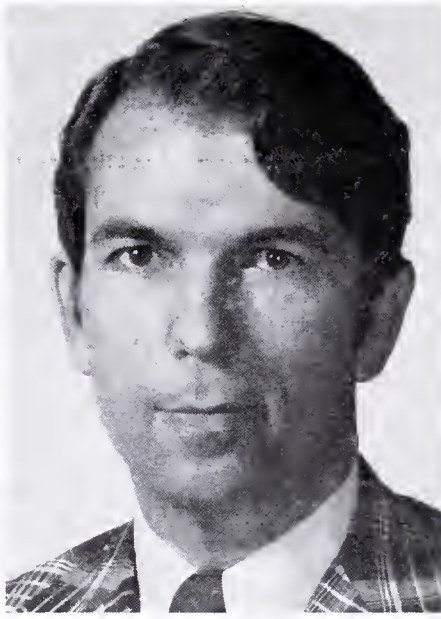
**KORY**



**LANGSTON**



**LATIMER**



**LUCAS**



**MARVIN**



**MAXWELL**



**MC-CULLOUGH**



**MC-DONALD**



of the Southern Society of Anatomists and the American Association of Anatomists (1946), and was designated one of The Two Thousand Men of Achievement for 1972.

#### RALPH L. MAXWELL

Born 1879, the same year the school was founded, he entered medical school as a resident of Little Rock and received his medical degree in 1907. Thereupon he was Prosector in Anatomy (1907-10) and Demonstrator in Anatomy (1910-11). After a lapse of several years he was listed as Associate in Pediatrics 1916-17.

#### LOUIS CARL MAY

Dr. May was born 17 May 1922 in Marine City, Michigan. After premedical preparation at the University of Arkansas, he received a Doctor of Medicine degree (1947) from the University of Georgia, and completed his internship at Sparrow Hospital, Lansing, Michigan. After two years of general practice in Michigan, Dr. May served only six weeks in the fall of 1950 as Instructor in Anatomy before being called to active duty in the Navy.

#### JEAN L. McCOY

Born in Detroit, Michigan, 9 January 1937 (nee Jean Juday), Mrs. McCoy entered medical technology school after some college work, and received a bachelor's degree (1959) with honors in Medical Technology from Michigan State University. While working concurrently as a Graduate Research Technician in Anatomy in the College of Veterinary Medicine, she completed the work for a master's degree (1960) awarded also by Michigan State University. She was Research Assistant in Biology at Parke, Davis and Company (1960), Research Assistant in the Institute of Industrial Health of the University of Michigan (1961), and Research Associate in the Department at the University of Texas Medical Branch (1962-65). Mrs. McCoy was Special Instructor in Chemistry at Little Rock University (1966), and was appointed Instructor in Anatomy for the summer in 1967 to teach Anatomy and Physiology to students in the UAMS College of Nursing.

#### ALBERT W. McCULLOUGH

Born in rural Dearborn County, Indiana, 19 July 1901, Dr. McCullough received both a Bachelor of Arts degree and Bachelor of Science degree from Central Missouri State Teachers College in 1929. During the ensuing depression years he

worked variously teaching school, riding as a professional jockey, and musician. Later he enrolled at the University of Kansas for graduate work, receiving both a master's degree and a doctoral degree in 1937. He was Instructor in Anatomy at Arkansas from 1939 to 1942, Assistant Professor 1942-44, Associate Professor 1945-60, and Professor from 1960 until his death in 1961. Dr. McCullough was a member of the American Association of Anatomists (1945), and contributed to the fields of histogenesis of blood, and to cardiogenesis with special reference to anomalies.

#### ZENAS M. McDONALD

Dr. McDonald was born 26 August 1931 in Metter, Georgia. He received a bachelor's degree (1952) from Mercer University. During the period 1955 to 1959, he completed graduate work at the University of Maryland School of Medicine, receiving his doctoral degree in 1959. He was appointed Assistant Professor of Anatomy in 1960, and terminated a year later to enter medical school at the University of Toronto. Dr. McDonald held both pre- and postdoctoral NIH fellowships, and published several papers relating to obesity and cancer.

#### ISADORE MESCHAN

Born in Cleveland, Ohio, 30 May 1914, Dr. Meschan received all of his advanced education at Case Western Reserve University: bachelor's degree (1935), master's (1937), Doctor of Medicine (1939), internship (1939-40), and residency training in radiology (1940-42). Following military service, he returned as Instructor in Radiology (1946-47). In 1947 he was appointed Professor and Chairman of Radiology at Arkansas, a position he held until he accepted the chairmanship (1955) at the Bowman Gray School of Medicine. He held an adjunct appointment as Professor of Anatomy (1947-49), in recognition of his responsibilities for Radiographic Anatomy. Dr. Meschan has written extensively, touching on Radiobiology, Radiopathology, and Diagnostic and Therapeutic Radiology, both texts and research papers. In addition to many medical groups, he is a member of the American Association of Anatomists (1947).

#### WILLIAM HAMILTON MILLER

Born at Lebanon, Tennessee, 8 May 1867, Dr. Miller came to Arkansas in 1885. His college education was obtained at Little Rock University,

and his medical degree was conferred 1 March 1888 by the Medical Department of the University of Arkansas. After a year of postgraduate training at New York's Bellevue Hospital, he returned to set up practice in Little Rock. He was Prosector in Anatomy from 1890 to 1897 and Adjunct Professor of Obstetrics for most of that period. He then transferred his full attention to Obstetrics, holding the position first as Professor until 1930, then Emeritus Professor of Obstetrics. He was a member of the Little Rock Medical Society and served a term as its president, and a member of the county and state societies. He contributed numerous papers to the medical literature in addition to his practice and staff duties at Baptist State Hospital and St. Vincent Infirmary. His busy and productive career was terminated by death, 23 January 1935.

#### CHARLES EVERETT OATES

Born in 1888, he received his medical degree in 1914 from the University of Arkansas School of Medicine. While enrolled as a medical student he was Lecturer in Chemistry (1911-12) and Laboratory Instructor in Chemistry (1912-14). After his medical degree, he was first Associate in, and then Associate Professor of, Chemistry and Pharmacology (1914-1918). Thereupon he transferred to Anatomy as Professor in 1918 and continued in this capacity until 1929.

#### MAHLON D. OGDEN

A native Little Rockian, born 5 December 1881, Dr. Ogden received his medical degree at Arkansas in 1904. After a year of postgraduate training at Johns Hopkins Hospital, he was appointed Assistant Demonstrator in Anatomy from 1905 to 1907. From 1907 until 1910 he held the position of Professor of Histology and Pathology during the time that histology was taught within the Department of Pathology. Appointed initially as Associate Professor of Gynecology in 1910, he became Professor in 1913 and retained this rank until 1916. He served as president of the Pulaski County Medical Society, and was Pulaski County Coroner for a number of years.

#### JOHN E. PAULY

Dr. Pauly was born 17 September 1927 in Elgin, Illinois, and received his bachelor's degree from Northwestern University in 1950. Both the master's (1952) and the doctoral degree (1955) were conferred by Loyola University (Chicago).

He was appointed as Instructor in Anatomy (1955) and Assistant Professor of Anatomy (1959) at The Chicago Medical School. From 1963 until his appointment as Professor and Chairman of Anatomy at Arkansas in 1967, he was Associate Professor of Anatomy at Tulane University where he received the Lederle Medical Faculty Award for 1966-67. Dr. Pauly has published extensively in a number of areas: electromyography, stereological anatomy and chronobiology. His contributions in the form of films, audiovisual teaching units and as co-author of five books are noteworthy. He is a member of a Study Section of the National Institute of Occupational Safety and Health. In addition to membership and elected offices in a number of scientific societies, he was the first secretary-treasurer of the Association of Anatomy Chairmen, served as president of the Southern Society of Anatomists (1971-72), and was secretary-treasurer of the American Association of Anatomists in which he became a member in 1957.

#### ERVIN W. POWELL

Born in Niles, Ohio, 8 November 1922, Dr. Powell received his bachelor's degree (1948) from Youngstown University and his master's (1950) and doctoral (1953) degrees from Western Reserve University. Subsequently he was Visiting Scholar (1954) at the University of Michigan, and attended a Neuropathology Program (1958) at the Armed Forces Institute of Pathology. He was Instructor in Anatomy (1954) and Assistant Professor of Anatomy (1956) at Creighton University Medical School. He was appointed Associate Professor of Anatomy at the University of Mississippi (1960), and has been Professor of Anatomy at Arkansas since 1966. Dr. Powell has published extensively in several areas of Neuroscience, with particular interest in the septal region. He has served on editorial boards, grant review committees and as Visiting Lecturer for the National Institutes of Health. In addition to memberships in neuroscience organizations, he is a member of the American Association of Anatomists (1961).

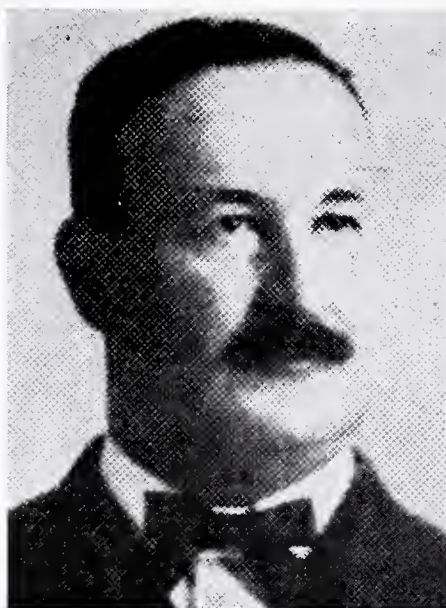
#### DAMON ARTELLE RHINEHART

A Hoosier by birth, born 5 June 1887 in Pulaski, Indiana, he received bachelor's, master's and medical (1913) degrees from the University of Indiana. He was a Teaching Fellow in Anatomy (1910-11) and Associate in Anatomy (1911-12)





**MESCHAN**



**MILLER**



**OATES**



**OGDEN**



**PAULY**



**POWELL**



**RHINEHART**



**ROBINSON**



**RUSHING**



while enrolled as a medical student. No indication of an internship was found, but during the first postgraduate year (1913-14) he was Instructor in Anatomy at Indiana. At Arkansas he was Associate Professor (1914-16) and Professor (1916-19) of Anatomy, and Professor of Applied Anatomy (1919-47). Also he was Instructor in Physical Diagnosis (1917-18); Instructor (1921-28) and Professor (1928-49) of Radiology; Clinical Professor of Radiology (1949-51); and Professor Emeritus of Radiology and Anatomy from 1951 until his death 22 May 1954. He was a dedicated teacher and physician, a clinical investigator, and the author of a text on roentgenographic technique. He was elected into the American Association of Anatomists in 1913.

#### BYRON L. ROBINSON

Born in Oconomowoc, Wisconsin, 30 March 1892, Dr. Robinson received a bachelor's degree (1914) and a master's degree (1917) from the University of Wisconsin. While enrolled in school, 1914-1918, he taught part-time at Wisconsin, Marquette, Mississippi and Minnesota. He had obtained some medical school credit prior to military service 1918-1920, and completed the requirements in 1924, again teaching part-time while in school. After his medical degree, he was Assistant Professor of Anatomy at the University of Iowa (1924-25) and then Professor at Arkansas (1925-41). After spending five years as Dean at Arkansas, he returned to the department for one year. In 1947 he became Professor of Anatomy at the Chicago Medical School, and held this position until joining the Veterans Administration in 1953. He retired from the VA about 1962 locating in Springfield, Missouri, among his beloved Ozarks where he died in 1973. Dr. Robinson was a member of the American Association of Anatomists, and contributed to the fields of Endocrinology and Neuroanatomy.

#### GARLAND STANLEY RUSHING

Dr. Rushing was born 17 July 1899 in Chidester, Arkansas, and received a bachelor's degree in education from the University of Arkansas. He entered the freshman medical class in 1925-26 at the University of Arkansas, completing only the first two years. During the sophomore year and the two academic years following it, he was Instructor in Anatomy. Next he transferred to the Rush Medical School of the University of Chi-

cago where he received his medical degree in 1931. After internship at the Denver General Hospital, he established practice in Longview, Texas, where he continued until his death 19 June 1973. In Longview he was associated with the Good Shepherd Hospital.

#### DWIGHT L. RYERSON

Dr. Ryerson was born 18 November 1908 in Onaga, Kansas. He received a bachelor's degree from the University of Arizona in 1931. He served on the staff at the University of Colorado 1931-33, then returned to Arizona as a Fellow in Zoology. After receiving his master's degree there in 1936, he was Instructor in Zoology, 1936-38. Next he was Assistant in Parasitology at the University of California at Los Angeles 1938-40 while working on his doctorate which was conferred in 1941. Following a year (1941-42) as a Hargitt Fellow at Duke University, he was appointed Instructor in Anatomy at Arkansas in 1942 and Assistant Professor in 1944. Dr. Ryerson left Arkansas in 1946 to become Professor of Zoology at Pomona College, a position he still holds. He was a Scripps Research Fellow 1952-53 at the Oceanographic Institute, and Fulbright Fellow to Pakistan in 1960. He is a member of the American Association of Anatomists, and is known for his studies in comparative hematology, cytology, and histochemistry.

#### LAWRENCE E. SCHEVING

Born in Hensel, North Dakota, 20 October 1920, and initially prepared for a business career, Dr. Scheving served six years in the Army prior to enrolling in college. He received bachelor's (1949) and master's (1950) from De Paul University. In 1950 he became Instructor in Biology at Lewis College, and finally Associate Professor and Chairman of the Department of Biological Sciences there. Concurrently he completed his doctoral work at Loyola University (Chicago) and the degree was conferred in 1957. Appointed Instructor in Anatomy (1957) at The Chicago Medical School, he progressed to Professor of Anatomy in 1966. Following a professorship in the medical center at Louisiana State University (New Orleans), he was appointed Professor of Anatomy (1970) at Arkansas, and the first Rebsamen Professor of Anatomical Science in 1974. Dr. Scheving is one of the pioneers in research dealing with circadian rhythms, and has published extensively



in this area. He is the recipient of several awards recognizing these achievements, and is a member of both the Southern Society of Anatomists and the American Association of Anatomists (1960).

#### TURE W. SCHOULTZ

Born in Alhambra, California, 6 June 1940, Dr. Schoultz's bachelor's degree (1965) was obtained at Colorado State University and his master's (1967) and doctoral (1971) degrees at the University of Colorado. After one year as Instructor in Physiology at New York University Medical School, Dr. Schoultz came to Arkansas first as Instructor in Anatomy (1972) and then Assistant Professor (1973). Research has been directed toward nervous tissue fine structure and catecholamine-related responses. He is a member of the American Association of Anatomists (1975). Since January 1977, Dr. Schoultz has been spending the greater part of his time as Assistant Dean for Student Affairs.

#### GEORGE HENRY SCIARONI

Born in 1890, he entered the University of Arkansas School of Medicine from Sutter Creek, California. He received his degree in 1914, and while a senior medical student, he was Assistant in Bacteriology and Assistant Demonstrator in Anatomy. After graduation he was Associate in Pathology and Bacteriology from 1914 to 1916.

#### JETT OTTO SCOTT

Born in DeQueen, Arkansas, 13 December 1904, Dr. Scott received a bachelor's degree from the University of Arkansas and then entered the University of Arkansas School of Medicine in 1928 as a resident of Ashdown, Arkansas. He completed the first two years on schedule, and then enrolled as a half-time junior for the next two years, 1930-32. During this same period he served also as Instructor in Anatomy. He received a Bachelor of Science in Medicine degree 3 June 1930, and the Doctor of Medicine degree 5 June 1933. Subsequently he practiced in Little Rock until about 1937 when he relocated in Hot Springs. There he continued practice until his death 8 November 1968. He was on the staffs of Ouachita Memorial Hospital and St. Joseph's Hospital, and a member of the American Medical Association and the state and county medical societies. Also he served in the Armed Forces during World War II.

#### UDHISHTRA D. SHARMA

Dr. Sharma was a citizen of India, born 16 August 1928 in Amritsar. He received a Bachelor of Veterinary Science degree in 1948 from Punjab Agricultural University, and then enrolled at the University of Illinois for graduate work. He received a master's degree (1954) and a doctoral degree (1957) from Illinois, and worked part of a year at the American Foundation for Biological Research before returning to India. He served as Professor of Animal Genetics in the Indian Veterinary Research Institute 1958-64, and Professor of Animal Husbandry at Punjab Agricultural University, 1964-65. In 1965 he was appointed Visiting Professor of Anatomy at the University of Arkansas for the one academic year. He has continued his residence in the United States since 1966, and presently is Professor of Biology at Alabama State University. Dr. Sharma is the author of many papers dealing with veterinary physiology and is serving as consultant to local veterinarians.

#### SAMUEL L. SHAVER

A native Arkansan born 1 December 1924 in El Dorado, Dr. Shaver attended Washington State College under the Army Specialized Training Program 1943-44. After military service he completed requirements for a bachelor's degree at the American International College. His doctoral degree was conferred (1951) by the University of Rochester. He was appointed Assistant Professor of Anatomy in 1951, but later resigned in 1956 to become a full-time medical student. Dr. Shaver's research, begun at Rochester under Atomic Energy Commission sponsorship, was concerned with normal structure and function of the testis and epididymis, and alterations induced by irradiation. He became a member of the American Association of Anatomists in 1954.

#### JEROME K. SHERMAN

Born in Brooklyn, New York, 14 August 1925, Dr. Sherman received a bachelor's degree from Brown University (1947), a master's from Western Reserve University (1949), and his doctoral degree from the University of Iowa (1954). Following his tenure as Research Associate at the American Foundation for Biological Research (1954-58), he was appointed Assistant Professor of Anatomy at Arkansas (1958), Associate Professor (1962), and Professor of Anatomy in 1967. On sabbatical





**RYERSON**



**SCHEVING**



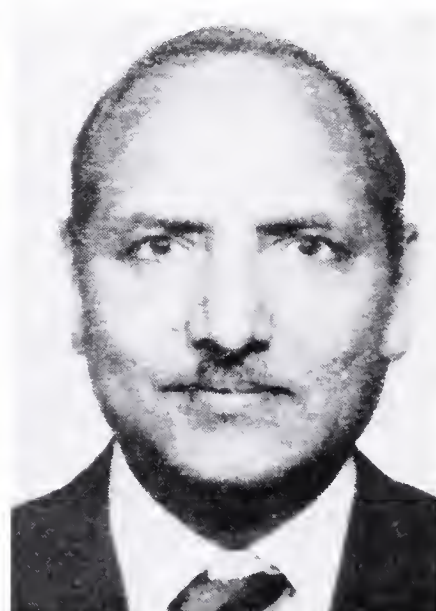
**SCHOULTZ**



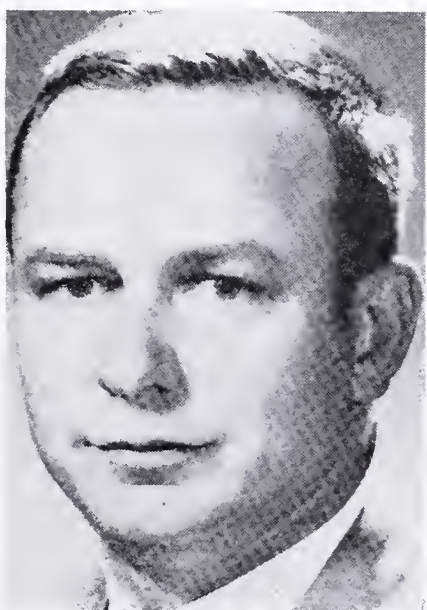
**SCIARONI**



**SCOTT**



**SHARMA**



**SHAVER**



**SHERMAN**



**SKINNER**



leave (1973-74), he was Special Chair Professor of Cryobiology at the National Chung-Hsin University in Taiwan. He received a Lederle Medical Faculty Award for 1961-64, and a Fulbright Senior Research Award for work at the University of Munich in 1965-66. Dr. Sherman's research has resulted in an extensive list of publications concerned with the cryobiological aspects of the preservation of sperm and other cells. Because of this he has been involved internationally in consultative and editorial efforts. He is a member of the American Association of Anatomists (1960), among many others in his specialty.

#### CLARENCE LEE SHILLADAY

Other than having a Master of Science degree, and holding the rank of Assistant Professor of Histology and Embryology (1927-29), no information has been obtained.

#### ROBERT D. SKINNER

A Texan by birth 23 November 1942, Dr. Skinner received his bachelor's degree (1965) from the University of Texas at Arlington, and his doctoral degree (1969) from the University of Texas Southwestern Medical School at Dallas where he held a National Institutes of Health Predoctoral Fellowship. After one year (1969-70) as a Postdoctoral Fellow in Physiology at the Harvard Medical School, he was appointed Instructor in Anatomy (1970) and then Assistant Professor (1971) at Arkansas. Dr. Skinner's research interest centers in the spinal cord and the evoked potentials produced by stimuli. In addition to specialty memberships, he is a member of the American Association of Anatomists (1971).

#### WILLIAM ANDERSON SNODGRASS

A native Kentuckian born 1872 in Murray, Dr. Snodgrass came with his parents to Little Rock when he was ten years old. His premedical work was completed in Little Rock, and he entered the University of Arkansas Medical Department in 1894 to receive his medical degree 8 April 1897. He immediately set up practice in Little Rock and began his participation as a member of the faculty. He was Prosector in Anatomy (1897-98), Assistant to the Chair in Anatomy (1898-1900), and Prosector in Anatomy (1900-02). In 1902 he had postgraduate work in New Orleans and then returned as Assistant to the Chair in Gynecology (1903-06). Additional training in surgery was obtained in the clinics in Vienna, and he returned

as Associate Professor of Surgery, 1910-18. He served during the Spanish-American War, and again in World War I, receiving the Distinguished Service Award for bravery during the Battle of the Marne. He organized the only Arkansas Red Cross unit to serve overseas. In 1919 he returned to his former position in which he served until 1939; he was Emeritus Professor of Surgery from 1939 until his death 4 January 1943. Dr. Snodgrass was author of a number of papers on clinical surgery, and was an officer in both county and state medical societies.

#### BERNARD L. SOLOFF

Dr. Soloff was born 21 June 1931 in New York City, and received both his bachelor's (1953) and master's (1956) degrees from the University of Cincinnati. His doctoral degree was conferred (1961) by Rice University. He was Assistant Professor of Biology at Stephen F. Austin State College for one year prior to becoming a Postdoctoral Fellow at the Marine Laboratory of the University of Miami in 1962. He then was Research Associate in Anatomy (1963-64) and Postdoctoral Trainee in Anatomy (1964-65) at the University of Tennessee Medical Units. Since 1965 he has held the position of Electron Microscopist at the Little Rock Veterans Administration Hospital with an adjunct appointment as Instructor in Anatomy (1966) and Assistant Professor of Anatomy (1970) in the medical school. Dr. Soloff's research has been concerned both with the technology of electron microscopy and the ultrastructure of leukemic and malignant cells. He is a member of the Southern Society of Anatomists.

#### SAMUEL S. STEWART

Born in 1872, he was graduated from the Washington University Medical Department in 1898. He served one year (1906-07) as Assistant Demonstrator in Anatomy. After a short leave from the faculty he returned as Associate Professor of Obstetrics, 1911-1913.

#### HOWARD K. SUZUKI

Dr. Suzuki was born 3 April 1927 in Ketchikan, Alaska, and received both bachelor's (1949) and master's (1951) degrees from Marquette University. Two summers (1950 and 1951) were spent in herpetological work at the University of Michigan Biological Station. His doctoral degree was conferred (1955) by Tulane University. He was Instructor in Anatomy at Yale University from

1955 before being appointed Assistant Professor of Anatomy at Arkansas in 1958. He was promoted to Associate Professor in 1962, and Professor of Anatomy in 1967. During the summer of 1962, Dr. Suzuki held an off-campus assignment at the University of Utah related to advanced, specialized techniques. In 1970 he accepted the Associate Deanship of the University of Florida's College of Health Related Professions. Dr. Suzuki is a member of the American Association of Anatomists (1958), and is noted for his investigations of the relation of endocrine substances to bone metabolism in various vertebrates.

#### ARTHUR E. SWEATLAND

Little was learned about Dr. Sweatland other than his birthdate in 1869. According to the Medical Directory he received his medical degree in 1905 from the Bellevue Hospital Medical College in New York. In conflict with this, the bulletins of the Medical Department list a person by the same name as Third Assistant Demonstrator in Anatomy 1903-04, and Assistant Demonstrator in Anatomy 1904-06. After an absence his name again appeared on the faculty list as Lecturer in Surgical Anatomy (1910-12). The reported dates conflicting about 1903-05 between Arkansas and New York have not been resolved.

#### ANDREW TAYLOR

A Scotsman by birth, Glasgow, 4 June 1902, Dr. Taylor was brought by his family to Little Rock shortly before World War I. He attended high school in Little Rock, and later Park College in Parkville, Missouri, and the University of Chicago for premedical preparation. He enrolled in the medical school of the University of Arkansas in 1922 and completed the first two years. A year's leave of absence made possible his serving full-time as Instructor in Anatomy, 1924-25. In March 1925 he transferred to Rush Medical College of the University of Chicago, receiving the medical degree in 1929. He did not return to Arkansas, choosing rather to practice in Hartford, Connecticut, until his death 23 October 1949.

#### JEPHTHA J. THIBAUT

Born in Scott, Arkansas, 3 November 1912, Dr. Thibault completed two years of premedical preparation at the Little Rock Junior College. He entered the School of Medicine in Little Rock

in 1931 and completed the first three years on schedule. At the end of a half-time senior year, he received a Bachelor of Science in Medicine, and his Doctor of Medicine degree after the second half-time senior year, 8 June 1936. While a half-time senior, 1934-36, he served as Instructor in Anatomy. Although he began residency training in surgery at the Piedmont Hospital in Atlanta, Georgia, in 1936, he died 23 November 1936 at the age of 24 years. He was a member of a family devoted to medicine, and himself an outstanding scholar as a student.

#### TIEN-HU TSAI

Born in Kao-Hsiung, Taiwan, 20 April 1924, Mr. Tsai received his bachelor's degree (1952) from the National Taiwan University. After experience variously as technician, chemist and teaching and research assistant in Japan and Taiwan, he received a master's degree (1962) from the University of Tennessee. Subsequently he was Research Assistant in Anatomy (1962-67) at The Chicago Medical School, Research Associate in Anatomy at the Louisiana State University Medical Center (New Orleans), and was appointed Instructor in Anatomy (1970) at Arkansas. Publishing first biochemical research, more recently he has been active in studies in chronobiology.

#### CARL K. UYEDA

Born in San Bernadino, California, 11 July 1922, Dr. Uyeda completed both his bachelor's (1947) and master's (1949) degrees at Syracuse University. He held overlapping appointments in the Maryland State Department of Health and Johns Hopkins University's Department of Gynecology and Obstetrics until 1965, concerned with cytologic diagnosis of malignancies. While Instructor in Cytopathology and in Anatomy at the University of Maryland, he received his Doctor of Philosophy degree (1966) from that institution. He became Senior Cytologist at the Johns Hopkins Cytological Screening Center in 1965, a position he held until appointed here in December 1967. At Arkansas he held joint appointments as Assistant Professor of Pathology and Assistant Professor of Anatomy until 1972 when he terminated his affiliation with the Department of Anatomy. Subsequently he devoted full time to the Department of Pathology as Director of the School of Cytotechnology. He left Arkansas to return to

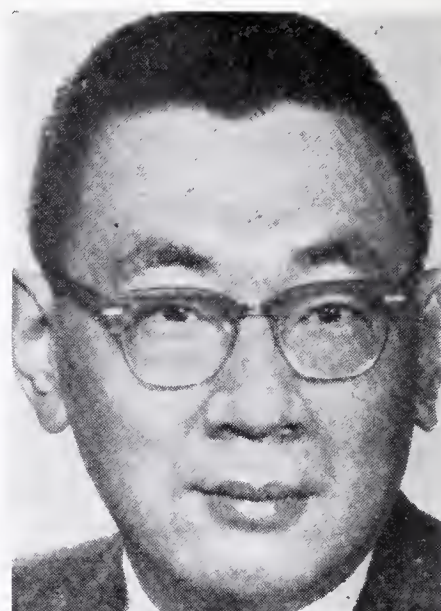




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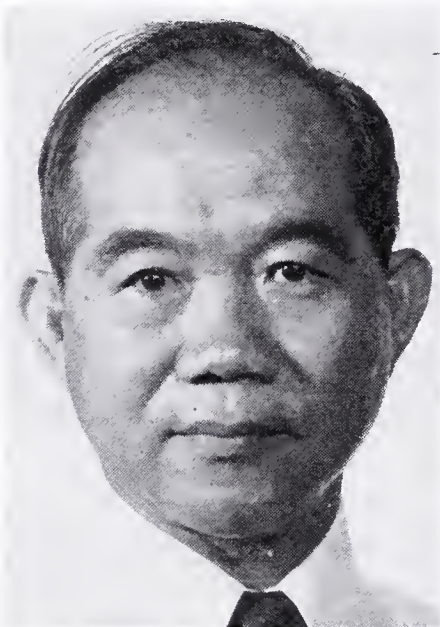
**SOLOFF**



**SUZUKI**



**TAYLOR**



**TSAI**



**UYEDA**



**VAUGHTER**



**WAKEFIELD**



**WATKINS**



California in March 1977. Dr. Uyeda is a member of the American Association of Anatomists (1970), and has published results of research concerned with cytological diagnosis of cancer.

#### SAMUEL PAUL VAUGHTER

A native of Georgia, Dr. Vaughter was born 6 February 1871 near Conway in rural Franklin County, Georgia. He was tutored by his father, a professional educator, both before and after the family moved to Conway, Arkansas. The tutoring was sufficiently successful that he met the entrance requirements for admission into the Medical Department of the University of Arkansas. After receiving his medical degree in 1892, he returned to Conway, Arkansas, where he practiced until 1898. His first appointment was Fourth Assistant Demonstrator in Anatomy for one year, 1903-04. He transferred to the new College of Physicians and Surgeons until 1910, when he returned to the University to hold faculty rank as Demonstrator in Anatomy 1910-11. Subsequently he became first Lecturer and then Instructor in Materia Medica, 1911-18. He continued as a member of the Clinical Faculty until illness prevented activity in 1920. In addition to teaching and practice, he served two stints in the elected post of County Coroner, 1902-08 and 1916 until his death 4 May 1921.

#### FRANK B. WAKEFIELD

An Instructor in Anatomy for two terms, 1922-24, Mr. Wakefield was listed as a member of the faculty of the Department of Anatomy. Holding only a bachelor's degree, he may have fallen victim to the process at that time of requiring all faculty to have advanced degrees.

#### DAVID CROCKETT WALT

Dr. Walt was born 20 December 1863 in Memphis, Tennessee, and was educated in the Memphis public schools and Christian Brothers College of that city. His medical degree was obtained from the Memphis Hospital Medical College in 1884, and he completed a year of postgraduate training at the New York Polyclinic (1884-85). He practiced first in Cuba, Shelby County, Tennessee, then successively in Little Rock, Wabbeseka until 1892, Altheimer until about 1908, and back again in Little Rock. After his return to Little Rock in 1910, he was appointed Demonstrator in Anatomy, apparently for that year only. He was one of the first insurance examiners, a

member of the county and state medical societies, and continued in practice until his death 22 July 1931.

#### JOHN WATERS

The earliest information found lists him as the first postgraduate student during the Medical Department's first year 1879-80. From 1880 until 1886 he was Professor of Clinical Medicine, and also held the title of Prosector in Anatomy for the same period. Between 1886 and 1889 he was Professor of the Institute of Medicine, which concludes his faculty record.

#### ANDERSON WATKINS

A native Little Rockian, born 19 July 1876 and educated in the public schools, Dr. Watkins completed his two-year premedical preparation at the University of Tennessee. He entered the Medical Department of the University of Arkansas in 1894, and received his medical degree 8 April 1897. During his final year as a student he was Prosector in Anatomy and then successively Assistant Demonstrator in Anatomy (1897-1903), Adjunct Professor of Physiology (1903-05), Assistant to the Chair in Clinical Surgery (1905-07), Professor of Principles and Practice of Surgery until 1910, jointly Associate Professor of Surgery and Professor and Chairman of Genito-Urinary Disease (1910-16), Professor of Surgery (1916-35), and Emeritus Professor of Surgery from 1935 until his death 26 May 1943. During World War I he served on the Council of Defense of Pulaski County. He was a Fellow of the American College of Surgeons and a member of the surgical staffs of three Little Rock Hospitals.

#### ERNEST HARL WHITE

A native Kentuckian, born in 1883 in Comer, he attended Southern Normal School (later to become Western Kentucky State Normal School, Bowling Green) for two years. He received a traditional education in mathematics, science and Greek and Latin, and a B.S. degree. Subsequently he enrolled at Clark College for two more years and received a B.A. degree in 1911. After receiving a Master of Science degree from the University of Chicago in September 1915, he moved to Argenta (North Little Rock), Arkansas, and entered the Medical Department of the University of Arkansas in 1917, receiving transfer credit for many of the courses taken at Chicago. During the period 1918-20, he was Professor of Microscopic



Anatomy before transferring to Harvard Medical School where he received his medical degree in 1922. After internship at Barnes Hospital in St. Louis, and returning to Little Rock to practice obstetrics and gynecology, he held appointments at the medical school: Instructor in Obstetrics and Gynecology (1922-26), Assistant Professor (1926-28), Associate Professor (1928-37), Professor (1937-40) and Chairman from 1940 until his death in 1942.

#### PAUL WITHERSPOON WILSON

Dr. Wilson was born in Hope, Arkansas, 21 March 1896, and attended the University of Arkansas until called into military service. After discharge his premedical preparation was completed at Tulane University, and he entered the University of Arkansas School of Medicine in 1919. The first two years were completed on schedule, and the Bachelor of Science in Medicine conferred 8 June 1921 at the end of the second year. During this period he was Student Assistant in Chemistry and Pharmacology. During the 1921-22 year he was on academic leave, teaching as Instructor in Anatomy. His last two years of School were completed (1922-24) without interruption and he received the medical degree 5 June 1924. Immediately following graduation, he was appointed Instructor of Anatomy (1924-25) and then Assistant Professor of Gross Anatomy (1925-26). He then practiced about four years in Huttig, Arkansas, returning to North Little Rock in 1930 as a staff member of the Veterans Administration. This position he held, interrupted only by service in World War II, until retirement in 1958. He spent his retired years in North Little Rock, dying 8 February 1967.

#### JOE G. WOOD

A native Texan, born 8 December 1928 in Victoria, Dr. Wood received his bachelor's degree in 1953 from the University of Houston. After serving in the U. S. Army Counterintelligence Corps (1954-56), he returned to the University of Houston where he received a master's degree in 1958. Transferring to the University of Texas Medical Branch, he completed requirements for his doctorate in 1962. He was Instructor in Anatomy

at Yale's School of Medicine 1962-63, before becoming Assistant Professor of Anatomy at Arkansas in 1963. In 1966 he relocated to the University of Texas Medical School at San Antonio as Associate Professor of Anatomy, with adjunct administrative appointments in the Dean's Office. In 1971 he was appointed to the newly formed faculty of the University of Texas Medical School at Houston. Dr. Wood is a member of the American Association of Anatomists (1963), and is known for his studies on amine transmitters of the nervous system.

#### RALPH M. WYNN

Dr. Wynn was born 1 November 1930 in Brooklyn, New York, received an A.B. degree from Harvard (1951), and completed work for his medical degree at New York University School of Medicine in 1954. In succession he interned at Bellevue Hospital in New York (1954-55), and received residency training in Obstetrics and Gynecology there 1957-61. Concurrently he was Assistant in OB-GYN at New York University, and subsequently Instructor, Assistant Professor and Associate Professor of OB-GYN over the period 1961 to 1968 at the State University of New York Downstate Medical Center. He next was appointed Professor and Chairman of OB-GYN at the University of Illinois Medical Center in 1968. In 1978 he became Professor and Chairman of the Department of OB-GYN at Arkansas, where he holds also a joint appointment as Professor of Anatomy. Important to an anatomist, Dr. Wynn held USPHS Postdoctoral Fellowships, first at the Royal Veterinary College in London, 1962, and in the Department of Anatomy at Washington University School of Medicine in 1963. In addition to membership in the American Association of Anatomists (1969), he is a member or honorary member of societies of his specialty, both national and international. His research in the anatomical field includes comparative placentation and the fine structure of the uterus and fetal membranes. Blessed with a prodigious memory and widely read, he is both contributor and editor for numerous texts and scientific journals.



WHITE



WILSON



WOOD



WYNN



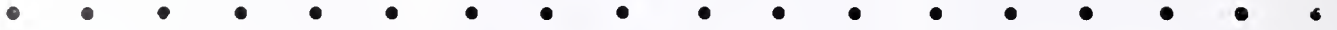
GARNER/STOCKFELD





## ELECTROCARDIOGRAM

## OF THE MONTH

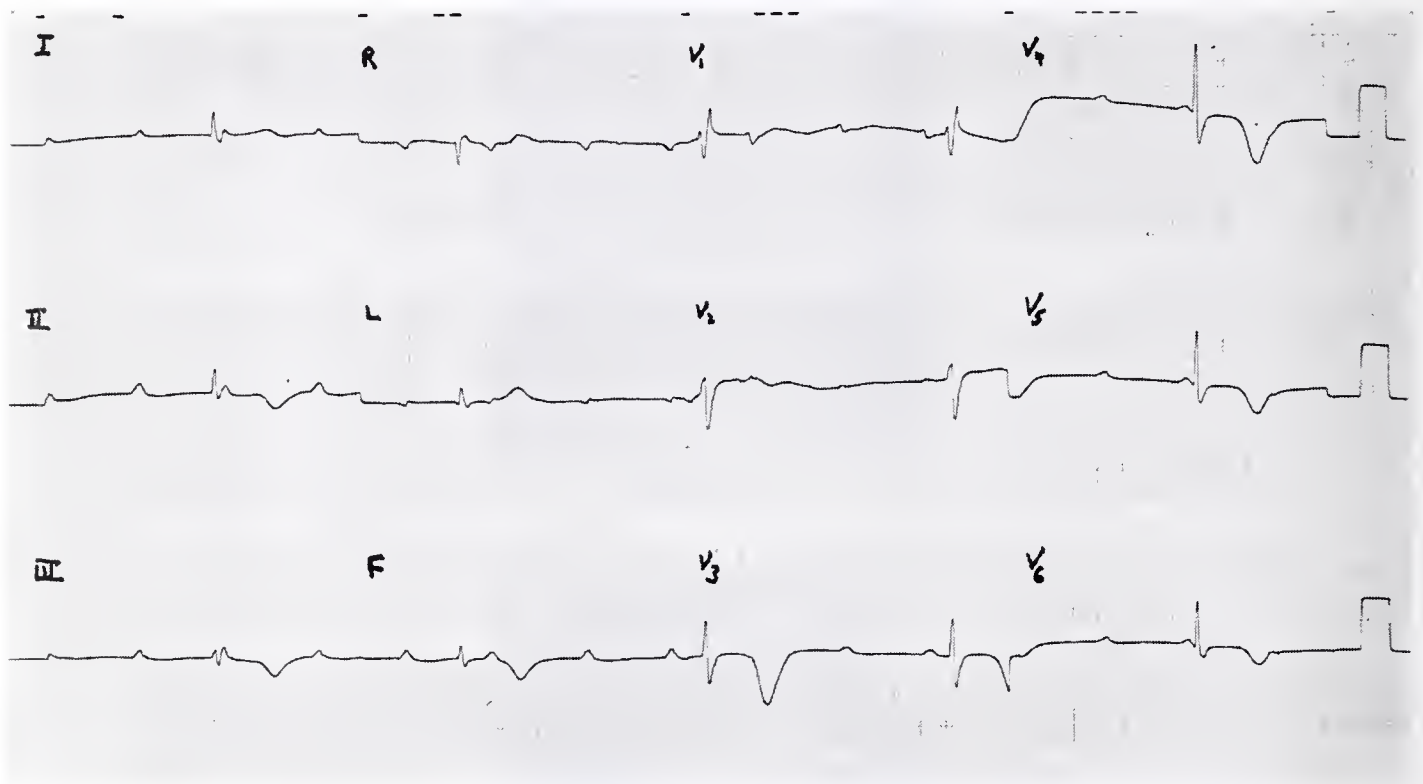


The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 426)

**HISTORY:** M. M. is an 82-year-old woman who has presented because of syncope and exertional dyspnea. Her physical examination reveals a blood pressure of 180/80 mmHg, occasional cannon A-waves in her neck veins, and rales. Her ECG is shown below.

Based upon her history, physical, and ECG, what would be the therapy of choice?



John W. Watson, M.D.  
Assistant Professor  
Division of Cardiology  
University of Arkansas for Medical Sciences  
4301 West Markham  
Little Rock, Arkansas 72201



# Office Orthopaedics

## Coccygodynia

Philip H. Johnson, M.D.\*

Coccygodynia is a word proposed by Simpson in 1859,<sup>16</sup> to represent painful coccyx. It is merely a symptom, and is no more a specific disease than is headache. The same diseases that affect the body elsewhere may involve the coccyx as well. Fractures, dislocations, infections, arthritis, and tumors may all involve the coccyx primarily. Pain may also be referred to the coccyx from the lumbosacral spine, sacrum, anus, rectum, and genitourinary tract.

### Historical Review

The earliest reports regarding the coccyx appeared in the 16th, 17th, and 18th centuries and dealt with fractures, dislocations, and birth trauma. In 1840, Blundell<sup>2</sup> described several pathologic processes for which he recommended coccygectomy. Nott,<sup>13</sup> in 1844, was the first to describe coccygectomy in the United States as treatment for infection. In 1859, Simpson<sup>16</sup> coined the term "coccygodynia" for pain secondary to fractures, dislocations, obstetrical trauma, and tumors. He recommended surgical stripping of the coccyx as treatment. A series of papers in the late 19th and early 20th centuries reported infections about the coccyx, including tuberculosis for which surgical excision was recommended. Hecksher,<sup>8</sup> in 1928, described an ossified coccyx, producing obstruction to delivery, and Graff<sup>5</sup> in 1924 performed coccygectomy during labor. Ely,<sup>4</sup> in 1910 was the first to describe massage of the coccyx and intrapelvic muscles as treatment for painful coccyx. Thiele<sup>18</sup> has been a strong proponent of massage, first describing his findings and treatments in 1937. Following this, a series of authors confirmed the efficacy of massage. In

1963 a classic article by Thiele,<sup>19</sup> in *The Diseases of Colon and Rectum*, describes in detail the techniques for massage of the spastic levator ani, and neighboring structures.

Yeomans,<sup>22</sup> in 1914, reported injection about the coccyx with alcohol. Thereafter, a series of authors (Mandl,<sup>11</sup> Shermondt,<sup>15</sup> Kleckner,<sup>10</sup> Waters,<sup>21</sup> Spence,<sup>177</sup> and Marmor<sup>12</sup>) have injected the coccyx with local anesthetics, quinine, urea, and cortisone. Injection still remains a popular and effective treatment.

Baastrup,<sup>1</sup> in 1915, recommended radiation therapy. In 1959 Holworth,<sup>9</sup> in an article in *Clinical Orthopedics*, presented an excellent review of the entire subject of coccygodynia.

During the last twenty years an assortment of pathologic conditions producing pain about the coccyx have been described, including tumors of various types. The same treatments which have been historically advanced have been employed, but with less emphasis on operative management. More importance has been placed upon finding the etiologic cause for pain in the coccyx. In 1975 Grant,<sup>6</sup> et al, in a comprehensive review of 316 cases, has reemphasized the importance of massage, heat, and muscle relaxants.

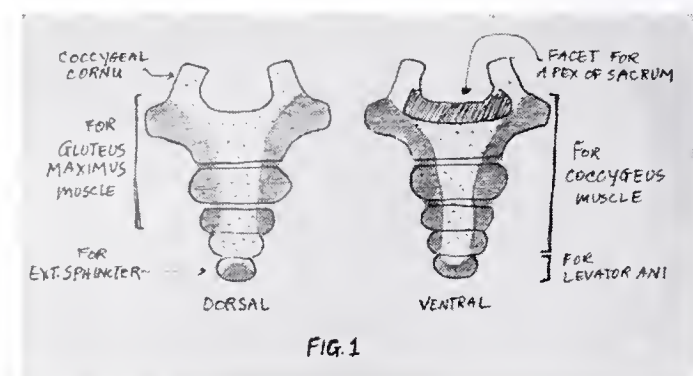
### Anatomy

The coccyx is made up of three to five bony segments, located at the end of the sacrum (Figure 1). The first coccygeal segment has a transverse process and a large upward bony projection (cornu) representing a superior articular process, bilaterally.

The sacrococcygeal joint is a synarthrosis. An intervertebral disc is present, as in the other

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segments of the vertebral column. There is usually an intervertebral disc between the first and second coccygeal segments, but bony fusion usually occurs between the lower coccygeal segments by middle age. The coccygeal segments decrease in size from proximal to distal, the fifth being a small bony nubbin, sometimes bifid. Anteriorly, posteriorly, and laterally, sacrococcygeal ligaments are present, which attach the coccygeal segments to each other, and bridge the sacrococcygeal junction. Around these ligamentous extensions of the sacrospinous and sacrotuberous ligaments fan out from the pelvis (ischium) to the lower sacrum and coccyx.

The muscular attachments of the coccyx are quite important to its function. On the anterior (ventral) surface of the coccyx, the muscles of the pelvic diaphragm (levator ani and coccygeus) border on the coccyx. The three muscles constituting the levator ani cover the entire floor of the pelvis and act as a sling about the anus, extending down to the tip of the coccyx. The coccygeus muscles arise from the spine of the ischium and insert over the whole distance of the distal sacrum and coccyx on the anterior surface. The gluteus maximus borders the upper coccyx on the dorsal (posterior) surface, and the external anal sphincter attaches to the tip. Contraction of all of these muscles produces forward flexion of the coccyx. There is no muscle which extends the coccyx. Unilateral muscle spasm may produce a deviation of the coccyx to one side. There is approximately 30 degrees of AP motion present in the sacrococcygeal joint, and on palpation of the tip of the coccyx, one centimeter of lateral motion may be considered normal.

The female coccyx is more prone to injury, due to normal anatomic variation. The distance between the ischial tuberosities is usually greater, and the coccyx is less forward flexed and positioned more upright. This combination makes

the coccyx more exposed to direct pressure during sitting. Coccygodynia is five times more frequent in females.

### Etiology

1. *Acute Trauma*—Direct injury to the coccyx, usually from a fall on the buttocks, may produce fracture, dislocation or acute sprain of the coccyx. The next most common cause of acute injury to the coccyx is childbirth. Associated with this trauma, there is the anticipated swelling, hemorrhage, ecchymosis and exquisite tenderness. This sometimes requires several weeks to subside. In the case of acute fracture or dislocation with marked angulation, sometimes digital manipulation may be necessary to correct malalignment.

2. *Chronic Trauma*—The most common cause for the painful coccyx is poor sitting posture. Sitting normally in an upright position produces no pressure on the coccyx, as weight is borne on the ischial tuberosities and posterior thighs. Sitting in a slumped position with reversal of the normal lumbar lordotic curve, will produce direct pressure on the coccyx. Thiele<sup>20</sup> has coined the term "television bottom" to refer to this condition of chronic recurrent trauma. Long automobile rides account for the next largest percentage of these cases. Riding on tractors, jeeps, and snowmobiles accounts for the infrequent occurrence of this condition in males. This chronic traumatic process leads to the production of osteoarthritis in the sacrococcygeal and coccygeal joints, which is frequently evident on x-ray.

3. *Pelvic Infection*—The most common cause for coccygodynia in the 325 cases presented by Thiele<sup>19</sup> in 1963 was that of ano-rectal infection (45% of the cases). Inflammatory disease in the perianal area and pelvis may produce referred pain to the coccyx. Cryptitis papillitis, anal ulcer, and fistulas all produce lymphadenitis and levator ani spasm, which results in referred coccygeal pain. This is sometimes referred to as "levator syndrome." Bladder irritability and vaginal discharge in the female, and prostatitis, urethritis and seminal vesicleitis in the male may produce the same syndrome. This group of conditions usually present with a nontender coccyx to palpation, negative x-rays, and spasm of the levator ani muscle. Any treatment directed simply toward the coccyx in this group of cases will have poor results.

4. *Intervertebral Lumbar Disc Disease* — Disc disease in the lumbar spine, with central herniation and pressure on sacral and coccygeal nerve roots, may produce pain in the coccyx. One reason that coccygectomy has fallen into disrepute has resulted from coccygectomy in lumbar disc disease. Many patients with coexistent coccygeal and lumbar disease can distinguish the difference in lumbar discogenic pain and coccygeal pain. It behooves the physician to make the distinction clear.

5. *Tumors* — Primary tumors involving the coccyx are extremely rare. Giant cell tumor, teratomas, and interosseous lipoma<sup>7</sup> have been reported. Metastatic tumors are less rare. Sacral chordomas, ependymoma and giant cell tumors produce referred pain to the sacrococcygeal area.

### Clinical

Coccygodynia is most common in females 30 to 50 years of age, but all ages and both sexes may be affected. The patient usually presents in the physician's office sitting on one buttock, trying to support their weight with their arms. Pain and tenderness in the area of the coccyx and adjacent muscles and soft tissues is the primary presenting complaint. Depending on the etiology, pain may be sudden or gradual in onset. Pain on defecation is usually only present with acute trauma. Pain, however, is most severe with sitting. Exacerbations of pain occur with activities which produce contraction of any muscle attaching about the coccyx. This may occur with walking, stooping, or lying on the back. Rarely patients complain of pain in the gluteal region, radiating down the leg. This has been attributed to piriformus muscle spasm.<sup>18</sup> Dyspareunia secondary to levator ani spasm is not an uncommon complaint. Pressure over the coccyx and manipulation of the coccyx on rectal examination is very helpful in determining etiology. With primary coccygeal lesions, palpation produces pain, usually quite exquisite. Ano-rectal infection frequently produces spasm of the levator ani muscle, which can be palpated on rectal examination. The anterior surface of the coccyx and lower sacrum, as well as pelvic muscles, can be examined in this manner.

X-rays of the sacrum and coccyx will reveal congenital anomalies, fracture, dislocation, osteoarthritis, unilateral muscle spasm, and destruction of the coccyx by infection or tumor. Negative x-rays and a nontender coccyx should suggest

referred pain from the lumbar spine, genitourinary organs, anus or rectum.

An unusual condition referred to as proctalgia fugax<sup>3</sup> has been described by several authors. This is a recurrent fulminating coccygodynia manifested by nocturnal paroxysms of extreme pain lasting fifteen to twenty minutes, followed by quick disappearance of symptoms. This condition is more common in intellectuals in young adulthood, and the etiology is obscure. Potthart<sup>14</sup> suggested the possibility of rectal mucosal intussusception. Finger pressure within the rectum is frequently performed by the patient for relief. Cold enemas, nitroglycerine and amyl nitrate have been recommended. Spontaneous improvement occurs with the approach of middle age.

### Treatment

The primary rule of treatment in acute or chronic trauma is to keep the weight off the affected joints until healing occurs. This means instruction in proper sitting posture. A foam doughnut pad or inflatable plastic ring is sometimes quite helpful.

Injections of local anesthetic and cortisone combinations usually are beneficial in chronic sprain and osteoarthritis. This, of course, gives temporary relief and usually breaks the muscle spasm cycle where the coccyx is the primary offender. Hot sitz baths, muscle relaxants and analgesics are helpful. Referral to a proctologist for treatment of ano-rectal pathology may be indicated. In these cases digital massage per rectum of spastic levator ani muscles has proven to be extremely effective.

Coccygectomy is indicated only for primary coccygeal pathology and only after a conscientious trial on conservative measures has failed. Coccygectomy, even in a busy orthopedic practice, is unusual.

### Summary

Coccygodynia is a symptom of an underlying disease. The most common cause for pain about the coccyx is trauma, usually chronic. This is most commonly seen in females, aged 30 to 50, with poor sitting posture. Injection of affected coccygeal joints affords temporary relief. When the coccyx is nontender and x-rays of the coccyx are negative, proctologic examination to rule out ano-rectal infection is indicated. Coccygectomy is rarely indicated, and is only considered after failure to respond to conservative treatment.



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## EDITORIAL

# Pertaining to the Heart

Alfred Kahn, Jr., M.D.

Cardiac research has resulted in many new clinical concepts. Hypertrophy of the myocardium has been known and appreciated in hypertensive disease, valvular heart disease, and other purely mechanical cardiac disorders for a very long period of time. So-called idiopathic cardiac hypertrophy is a clinical disorder which has been the subject of a good deal of study in the more recent past; it is still somewhat of a mystery. In the June, 1980, issue of *The American Journal of Medicine* (Volume 68, page 797), J. F. Goodwin has published an editorial entitled "An Appreciation of Hypertrophic Cardiomyopathy." In this excellent editorial, Goodwin states that so-called obstructive cardiomyopathy "does not exist;" the pseudo-obstruction, he says, is the result of the marked cardiac muscle hypertrophy contracting against an irregular shaped cavity; this altered function he calls "a gradient" rather than an obstruction. The degree of gradient is not a good clinical prognostication. Goodwin says that a fixed gradient might indicate a hidden second disease — and as such knowledge of the gradient is important in the clinical evaluation. Of interest to the clinician is the author's discussion of how hypertrophic cardiomyopathy may mimic other diseases — and be hard to find if there is no gradient — for example, angina pectoris with normal coronary arteries; careful echocardiography can be used as a diagnostic tool in these cases. Goodwin feels that there are distinctive pathological features of hypertrophic muscle, hypertrophy with a circular formation and myofibrillar changes visible by electron microscopy. He recommends cardiac angiography as a good diagnostic tool but he cautions that some cases may have dilated ventricular cavities. An intriguing cause of hypertrophic cardiomyopathy is suggested by amines. For example, non-adrenalin

administration is said to simulate this order; and there is an association with pheochromocytoma and thyrotoxicosis. Sudden death in this disease is probably arrhythmic — not obstruction. Anti-rhythmic drugs may be helpful in properly identified cases used for diseased coronary arteries ineffective as these patients have large narrowed coronary vessels in most instances.

Another interesting facet of cardiac disease has been reported by Darsee, Miklozek, Heymsfield, Hopkins, and Wenger. It is entitled "Mitral Valve Prolapse and Ophthalmoplegia: A Progressive, Cardioneurologic Syndrome" (*Annals of Internal Medicine*, Volume 92, page 735, June, 1980). They state that there are a group of disorders in which there is a combination of skeletal muscle abnormality syndrome. They have studied seven cases in whom there is a progressive neurologic disorder with ophthalmoplegia, ataxia, and neuromyopathy. All of their cases had mitral valve prolapse and had a similar course. The syndrome described here falls into a general group known as "Ophthalmoplegia Plus," and Darsee, et al, feel that this is the third type reported in which there appears to be "an underlying metabolic defect, namely defective pyruvate metabolism. These patients also have an immunologic defect characterized by a low level of the fourth complement component and binding of immunoglobulin to feline blasts.

Two articles appeared in *Circulation* (Volume 62, page 8 and page 17, July, 1980) on the use of digitalis in the presence of myocardial infarction. Morrison and his colleagues studied a group of patients with acute myocardial infarction; they did not include cases of cardiogenic shock, pulmonary edema, high blood pressure, valvular heart disease, history of past infarction, or right



ventricular infarction. Their cases tended to have low ejection fractions and large infarcts. They concluded that Digoxin had no ill effect; left ventricular function is said to have improved slightly. They did not show that Digoxin influenced the size of the infarct. Marcus, in an editorial just after the article by Morrison, warns that digitalis preparations given to patients with myocardial infarction may get increased bulging of the infarcted area due to stronger heart muscle contractions and secondly digitalis may cause systemic vasoconstriction, thus causing the heart to have to work harder to perfuse the peripheral tissues. He specifies the use of digitalis according to severity of the infarct. Firstly, he does not recommend

digitalis in infarction without heart failure; he does suggest the use of digitalis in infarction with mild heart failure. Marcus does not start patients with myocardial infarction and severe heart failure on digitalis, but he does use it in selected cases if the indications are appropriate. Marcus avoids digitalis in cardiogenic shock. He recommends digitalis for the atrial arrhythmias seen with myocardial infarction. This editorial emphasizes two additional points concerning digitalis and myocardial infarction; first of all, Digoxin may be absorbed more slowly in the presence of infarction; secondly, the sensitivity to digitalis may be increased in patients with infarction.



## "From Other Years"

*Journal of the State Medical Society of Arkansas*

Vol. 2 No. 1 July, 1891 p. 39-40

### A GOOD ILLUSTRATION

Recently a physician was called from Little Rock to see a patient in the country. He found a lady suffering from a prolonged spell of malarial fever. The mother of the girl was very solicitous and asked the doctor if there was not *some medicine* that would break her fever and cause her speedy recovery. The physician explained to her that the general impression among the people that there was a specific remedy for each disease was incorrect, and that the physician could only put a patient in the best condition to get well, but could not by known means force a recovery any more than the farmer could *make* his cotton grow, in spite of the soil, weather, etc. He was illustrating his meaning by comparing a good physician to a well-informed farmer, when the old lady interrupted with the remarks, "Oh, I see, I see. I understand now. It's just like my old man was onct. There was goin' to be a barbecue, and he wanted to have the first cotton bloom to show to his neighbors when they met; so he selected a few stalks on some rich ground close to the house, and watered them every day it didn't rain, and they was the *last* stalks to bloom on the place." How many recoveries from sickness have been retarded by too much medicine!

From the University of Arkansas for Medical Sciences Library, History of Medicine/Archives Division.

ERRATUM to "The Journal of the Arkansas Medical Society," Vol. 77, No. 7, December, 1980, page 268.

The following reference was omitted in the editorial entitled "Lawley, James and Jones in Circulating Immune Complexes":

"Gastroenterology," Vol. 78, No. 3, March, 1980, page 626.

ERRATUM to December, 1980, issue of The Journal of the Arkansas Medical Society, Vol. 77, No. 7, page 258:

. . . Compounding this problem, provision for faculty research was totally inadequate, a deficiency that had *not* gone unnoticed by accreditation teams of the American Medical Association and the Association of American Medical Colleges.

(The word omitted in issue was NOT.)

### ANSWER—Electrocardiogram of the Month

DISCUSSION: Her ECG shows an atrial rate of 88/minute and a ventricular rate of 30/minute. The P-waves march freely through the trace initiating none of the QRS complexes. The QRS complexes are in right bundle branch black pattern. Thus, the ECG shows complete heart block and pacing would be indicated.

## MEDICINE IN THE NEWS



### THE MONTH IN WASHINGTON

The Reagan Administration formally took over the reins of office with high hopes for ameliorating the nation's problems at home and abroad but with no illusions that the job will be easy. The new Congress, its ranks swelled with conservatives, met for the first time with its leaders pledging their best efforts to help Reagan carry out his legislative programs.

One of the first orders of business was confirmation of Reagan's cabinet appointments, including that of former Sen. Richard Schweiker (R., Pa.) to be Secretary of the Health and Human Services (HHS) Department.

Congress faces a heavy agenda on health.

Whether national health insurance will be seriously considered depends whether the Reagan Administration chooses to push some plan such as "pro-competition" or catastrophic, both of which were cited favorably during the campaign.

Administration plans to deregulate aspects of health, to make economies, and possibly to eliminate some programs appear to be in the works.

Many major health programs are due to expire in the new two years and must be re-authorized by Congress. This affords the Administration a timely opportunity to request major changes in them.

The list of programs requiring congressional action includes Health Services Research, Statistics and Technology; Grants to States for Health Services; Primary Health Centers; National Health Service Corps; Home Health Services; Primary Care Research and Demonstration Projects; Medical Libraries; National Research Institutes; Health Research and Teaching Facilities and Training of Professional Health Personnel; Student Assistance; Capitation Grants to Schools of Medicine, etc.; Nurse Training; Family Planning; Genetic Diseases; Sudden Infant Death Syndrome; Hemophilia; Health Maintenance Organizations; Health Planning; Health Resources Development; Health Information and Health Promotion; President's Commission on

Ethics and Research; Developmental Disabilities Protection and Alcohol and Drug Abuse Programs.

The last Congress failed to act on important bills that carry over into the new session. The HHS Department appropriations measure and aid-for-medical-education are the two major bills in this category. The Child Health Assurance bill, a priority of the Carter Administration, may be put on the shelf in the new Congress, though there is still substantial support. The Hospital Cost Containment bill is beyond salvage.

The medical education bill may face rough scrutiny. Both House and Senate last year approved measures reducing capitation aid for medical schools, but they could not agree on specifics.

Health Maintenance Organizations are worried that their allotments from the government will be pared. The National Health Service Corps comes under a HHS Secretary in Schweiker who has been very critical of its growth. The Health Planning bill awaits formidable conservative opposition.

The new membership of the two major Senate health committees was formed. The Republicans hold a two-seat edge on both groups—Senate Finance and Senate Labor and Human Resources.

Sen. Edward Kennedy (D., Mass.) chose to become the ranking minority member of the Human Resources Committee rather than of the Senate Judiciary Committee, giving Kennedy a forum from which to lead the opposition on health affairs. Sen. Harrison Williams (D., N.J.), former chairman of the committee, chose to be the top Democrat on another committee.

Here is the membership of the two committees that guide most health legislation in the Senate:

### SENATE FINANCE

#### Republicans

Robert Dole (Kans.)  
Bob Packwood (Ore.)  
William Roth (Dela.)  
John Danforth (Mo.)



John Chafee (R. I.)  
 John Heinz (Pa.)  
 Malcolm Wallop (Wyo.)  
 David Durenberger (Minn.)  
 William Armstrong (Colo.)  
 Steven Symms (Idaho)  
 Charles Grassley (Iowa)

**Democrats**

Russell Long (La.)  
 Harry Byrd (Va.)  
 Lloyd Bentsen (Texas)  
 Spark Matsunaga (Hawaii)  
 Daniel Moynihan (N. Y.)  
 Max Baucus (Mont.)  
 David Boren (Okla.)  
 Bill Bradley (N. J.)  
 George Mitchell (Maine)

**SENATE LABOR AND HUMAN RESOURCES**

**Republicans**

Orrin Hatch (Utah)  
 Robert Stafford (Vt.)  
 Gordon Humphrey (N. H.)  
 Dan Quayle (Ind.)  
 Don Nickles (Okla.)  
 Jeremiah Denton (Ala.)  
 Paula Hawkins (Fla.)  
 Lowell Weicker (Conn.)  
 John East (N. C.)

**Democrats**

Edward Kennedy (Mass.)  
 Harrison Williams (N. J.)  
 Jennings Randolph (W. Va.)  
 Claiborne Pell (R. I.)  
 Thomas Eagleton (Mo.)  
 Donald Riegle (Mich.)  
 Howard Metzenbaum (Ohio)

On the House side, Rep. Dan Rostenkowski (D., Ill.) assumes the chairmanship of the House Ways and Means Committee in the next Congress rather than take a leadership whip post. Present chairman, Al Ullman (D., Ore.), was defeated for reelection.

\* \* \* \*

The nomination of former Sen. Richard Schweiker (R., Pa.) to be Secretary of Health and Human Services (HHS) brings to the post a man widely versed in health affairs.

The 54-year-old Schweiker, who had announced last year that he would not seek re-election to the Senate, was the front runner from the start in speculation about the HHS post. Schweiker

has been a close friend of Reagan's since he agreed to be his vice presidential running mate in event Reagan had captured the GOP nomination four years ago.

As ranking Republican member on the Senate Labor and Human Resources Committee and on its Health subcommittee, Schweiker has an extensive knowledge of health legislation and of the Federal health structure.

Schweiker has expressed strong convictions about certain aspects of health, notably reservations about the extent of aid for medical education and for the National Health Service Corps.

In an interview last summer, Schweiker said a Reagan Administration will not endorse national health insurance or hospital cost containment and will move to "deregulate."

Schweiker is the author of a "pro-competition" plan that would eliminate most of the present tax deductions for private health insurance in an effort to encourage more cost-consciousness by business and consumers.

"You certainly will see a stop to the rush to federalize things," Schweiker said. But he cautioned that reversing the trend will take time. "There is so much momentum that it will take acts of Congress to repeal some programs," he said.

Federal involvement in health has not produced solutions to the nation's health problems, he said. "We are cautious and skeptical about involving the government further. In fact, we are looking at ways to disinvolve the government."

The senator said Health Maintenance Organizations should have their "full day in the sun," but "we should not build upon a system that favors one mode of competition over another."

As for medical schools, he said "we must give them protection if we step on the brakes. We can't leave them high and dry."

Schweiker said the organizational structure at HHS is haphazard and suggested there would be moves to get the "health components working together."

Commenting on the National Health Service Corps, Schweiker said "federal support on the current scale will slow permanent solutions to physician maldistribution."

\* \* \* \*

The nominations of Schweiker to be HHS Secretary and of former Rep. Dave Stockman (R., Mich.) to be Director of the Office of Manage-

ment and Budget brought to the cabinet two proponents of the so-called "pro-competition" health plan.

"Pro-competition" measures remove the current federal tax subsidy for purchase of private health insurance. People would receive tax-free rebates when they choose plans costing less than a set amount of premiums. High deductibles and co-insurance are encouraged. Most such bills before Congress include a catastrophic benefit as a requirement for private insurers. The intent is to foster competition among insurers to produce innovation and efficiency and to reduce waste. Much of the present regulatory apparatus would be stripped away, including Professional Standards Review Organizations (PSRO's) and health planning.

One of the major bills before the House was sponsored by Stockman and Rep. Richard Gephardt (D., Mo.). Sen. David Durenberger (R., Minn.), who may be chairman of the Senate Finance Subcommittee on Health, is a pro-competition backer.

\* \* \* \*

The HHS Department is anticipating changes with the new Administration. The agency foresees wide organizational shifts. The Reagan team has been considering proposals to bring education back into the agency, undoing the brand new Education Department that was created by President Carter. Significant changes appear inevitable at the Health Care Financing Administration (HCFA) which runs Medicare and Medicaid. There is sentiment for creation of a cabinet-level Health Department. A stronger policy role is in the works for the Public Health Service (PHS).

Former HHS Secretary Patricia Harris proposed a new structure consisting of two HHS Under Secretaries, one for health, the other for Social Security. This would help solve problems created by the present awkward arrangement under which HCFA, controlling the two largest health programs, is separate from the Public Health Service. Harris proposes that HCFA report to the Health Under Secretary.

\* \* \* \*

Scores of changes were made in the Medicare and Medicaid programs as a result of the passage of the Budget "Reconciliation" bill late in the Congressional "lame duck" session.

Most of the controversial provisions affecting the medical profession were dropped from the

bill as were the sweeping changes in hospital reimbursement that had been approved by the Senate.

Here are some of the major provisions that were enacted:

- Professional Standards Review Organizations — No PSRO will be required to make records available pursuant to a Freedom of Information Act request until one year after the entry of a final Court order requiring such disclosure.

- Home Health — Unlimited home health care benefits would be made available under both Parts A and B; the three-day prior hospitalization requirement would be eliminated; the \$60.00 deductible under Part B would be waived; occupational therapy would be added as a benefit criteria, and the State licensing requirement would be waived.

- Alcohol — Medicare will reimburse for inpatient alcohol detoxification services in free-standing facilities meeting health and safety standards.

- Tests — Diagnostic tests performed on an outpatient basis in the Outpatient Department of a hospital or a physician's office within seven days of a patient's admission to the hospital would be reimbursed in full.

- Rehabilitation — Permits reimbursement under Medicare for comprehensive outpatient rehabilitation facilities under Part B based on the costs incurred in furnishing covered services, including: physicians' services, nursing care, physical therapy, occupational therapy, speech pathology, respiratory therapy, social and psychological services, prosthetic devices, drugs and biologicals, supplies, appliances, equipment, and other items which are necessary for the rehabilitation of the patient.

- Outpatient Surgery — Medicare reimbursement is authorized for the facility cost of ambulatory surgical centers where the ambulatory surgical center has agreed to accept assignment. This reimbursement would be available in situations where the center performed certain procedures that are considered "safe" and "appropriate" in an outpatient setting. The physician's reasonable charge for performing the procedures would be reimbursed at 100%, providing the physician also agrees to accept assignment. A physician who accepts assignment will receive additional Medicare reimbursement for performing certain listed surgical procedures in his or her office.



- Optometrists — Coverage for optometrists' services to aphakic patients will be provided under Medicare. A study will be conducted to determine whether Medicare should reimburse optometrist services to cataract patients.

- Radiologists and Pathologists — The special 100% reimbursement with no deductible, for services to hospital inpatients by radiologists and pathologists would be limited to those who agree to accept assignment for all services furnished to hospital inpatients.

- Teaching Hospitals — Alternate forms of reimbursement for professional services rendered by physicians in teaching hospitals are provided. Hospitals having approved teaching programs may elect to be paid for the services of those programs on a reasonable cost basis providing that all physicians involved in the teaching program elect to be paid on such a basis. Alternatively, physicians could elect to receive reimbursement on the basis of reasonable charges under Part B if conditions are met.

- Rural Hospitals — The HHS Secretary would be authorized to apply Medicare standards to rural hospitals in a flexible manner to take into

account the availability of qualified personnel, etc.

- Transfer for Skilled Nursing Facility Coverage — The 14-day period within which a Medicare beneficiary must be transferred from a hospital to a skilled nursing facility in order to qualify for post-hospital extended care benefits would be extended to thirty days.

- Clinical Labs — Payment for laboratory services will be limited to the lower of the laboratory's reasonable charge, or the actual amount billed by the physician plus a nominal fee to cover his or her costs.

\* \* \* \*

#### BOOK PUBLISHED

A second printing of the book, *Current Ocular Therapy* by Drs. F. Hampton Roy of Little Rock and Frederick T. Fraunfelder of Portland, Oregon, has been completed by publisher W. B. Saunders Company. The book is also to be published in 1981 by the Editorial Medica Panamericana of Buenos Aires, Argentina, in Spanish. The book covers current treatment of ocular conditions; approximately 400 consultants contributed to the volume.



## THINGS TO COME

### May 2-3

*Clinical Nuclear Medicine Imaging.* University of Mississippi School of Medicine Department of Radiology. Topics: application of nuclear medicine in abdominal disease, nuclear medicine brain imaging in the CT era, thyroid diagnosis and treatment, and cardiac nuclear medicine. Fee: \$60. Accredited for eight contact hours in Category I.

For more information, contact the Division of Continuing Health Profession Education, University of Mississippi Medical Center, 2500 North State Street, Jackson, Mississippi 39216; phone (601) 987-4914.

### May 8-10

*The General Practice of Anesthesiology.* The Arkansas Society of Anesthesiologists and the Department of Anesthesiology, University of Arkansas College of Medicine. Red Apple Inn, Heber Springs. For further information, contact Dr. Richard B. Clark, Department of Anesthesiology, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Arkansas 72201.

### December 10-12

*Current Concepts in Cancer Therapy.* Washington University in St. Louis, Section of Surgical Oncology, Department of Surgery, and Missouri Chapter of the American Cancer Society. Nineteen hours, AMA, AAFP, AOA. For further information, Office of CME, Washington University School of Medicine, Box 8063, 660 South Euclid, St. Louis, Missouri 63110; phone (314) 454-3873.

# keeping up

## Category 1 Continuing Medical Education Programs Available in Arkansas

### **PSYCHOSOMATIC MEDICINE FOR THE FAMILY PHYSICIAN**

Presented by Ben N. Saltzman, M.D., *April 11, 8:00 a.m. to 5:15 p.m.*, UAMSC, Education II Building, Room G-141B. Registration fee: \$40. Seven hours Category I credit.

### **MENOPAUSE AND ITS MANAGEMENT**

Presented by W. P. Dmowski, M.D., Ph.D., *April 11, 7:30 a.m. to 5:30 p.m.*, Hilton Inn, Little Rock. Eight hours Category I credit. Registration fee: \$75. Sponsored by UAMS.

### **MANAGEMENT OF THE PSYCHO-GERIATRIC PATIENT**

Presented by Drs. Gabe Malletta, Don Gold, and Emilo Ekhart, *April 25, 8:00 a.m. to 12:30 p.m.*, Baptist Medical Center Library. Four hours Category I credit.

### **ARKANSAS DERMATOLOGIC SOCIETY**

Presented by G. Thomas Jansen, M.D., *April 25 and 26, 9:00 a.m. to 12:00 noon*, UAMSC Education II Building. Six hours Category I credit. Registration fee: \$40. Sponsored by UAMS.

### **NEURO-OPHTHALMOLOGY CONFERENCE**

Presented by John Shock, M.D., *April 27, 7:30 a.m. to 5:00 p.m.*, UAMSC Education II Building, Room 8121. Registration fee and hours of credit not determined at this time. Sponsored by UAMS.

### **NEURO-OPHTHALMOLOGY CONFERENCE**

Presented by Patrick O'Connor, M.D., *April*

*28, 9:00 a.m. to 12:00 noon*, followed by luncheon, Camelot Inn, Little Rock. This meeting is in conjunction with the annual meeting of the Arkansas Medical Society. Three hours Category I credit. Registration fee: \$25 (covers attendance and luncheon). Sponsored by the Arkansas Academy of Ophthalmology. Inquiries should be directed to James Landers, M.D., 500 South University, Little Rock 72205.

### **PULMONARY PATHOLOGY**

Presented by Glen F. Baker, M.D., *May 2, 8:30 a.m. to 12:00 noon; May 3, 9:00 a.m. to 12:00 noon*, Red Apple Inn, Heber Springs. Five and one-half hours Category I credit. Registration fee undetermined at this time. Sponsored by UAMS.

### **THE GENERAL PRACTICE OF ANESTHESIOLOGY**

Presented by Richard Clark, M.D., Arkansas Society of Anesthesiologists, *May 8, 5:00 p.m. to 7:00 p.m.; May 9, 8:00 a.m. to 12:15 p.m.; May 10, 8:30 a.m. to 12:00 noon*, Red Apple Inn, Heber Springs. Five and one-half hours Category I credit. No fee for ASA members; \$20 for CRNA's; \$40 for others. Sponsored by UAMS.

### **PEDIATRIC UPDATE**

Presented by Robert Fiser, M.D., *May 20, 11:30 a.m. to 4:00 p.m.; May 21, 8:00 a.m. to 12:30 p.m.; May 22, 7:30 a.m. to 1:00 p.m.*; Indian Rock Resort, Fairfield Bay. Eleven hours Category I credit. Fee: \$150. Sponsored by UAMS.

### **RECURRING EDUCATION PROGRAMS**

Unless otherwise indicated, programs are for one to two hours Category I credit.

#### **EL DORADO — AHEC**

*Pathology Conference*, second Tuesday, 12:30 p.m. to 1:30 p.m., AHEC.

*Chest Conference*, alternate Wednesdays, 12:30 p.m. to 1:30 p.m., Warner Brown Hospital.

#### **FAYETTEVILLE — AHEC-NW**

*Medicine Teaching Conference*, each Saturday, 7:30 a.m., Washington Regional Medical Center.

#### **FAYETTEVILLE — VA MEDICAL CENTER**

*Radiology Conference*, April 2, 16, and May 7, 21, 1:00 p.m., Conference Room.

*Pathology Conference*, April 21 and May 19, 3:00 p.m., Conference Room.

*Mortality Conference*, April 9 and May 14, 3:00 p.m., Conference Room.

#### **FORT SMITH — AHEC**

*Tumor Conference*, every Tuesday, 12:00 noon, Fourth Floor Conference Room, Sparks Regional Medical Center.

As organizations accredited for continuing medical education by the Liaison Committee on Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.



## KEEPING UP

### JONESBORO — AHEC-NE

*Interesting Cases*, second and fourth Tuesday, 12:00 noon, Dietary Conference Room, St. Bernard's Regional Medical Center.

*Tumor Conference*, third Tuesday, 12:00 noon, Dietary Conference Room, St. Bernard's Regional Medical Center.

*Medical Lecture Series*, each Friday, 12:00 noon, Dietary Conference Room, St. Bernard's Regional Medical Center.

### LITTLE ROCK — BAPTIST MEDICAL CENTER

*Central Arkansas Primary Care Conference*, second Tuesday, 7:00 p.m. to 9:00 p.m., Auditorium. Two hours Category I credit.

*Cardiopulmonary Resuscitation Course*, second Wednesday, 6:00 p.m. to midnight, Human Resource Development Area. Six hours Category I credit.

*Emergency Medicine Conference*, April 12, 29, and May 13 and 27, 12:30 p.m. to 1:30 p.m., Conference Room #1.

*Morbidity and Mortality Conference*, first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.

*Surgery Conference*, each Thursday except first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.

*Anesthesiology Conference*, third Thursday, 7:00 a.m. to 8:00 a.m., Dining Room #3.

### LITTLE ROCK — ST. VINCENT INFIRMARY

*Interhospital GI Problems Conference*, first Monday, 6:00 p.m. to 7:30 p.m., Room E155, Education Wing.

*Pediatric Conference*, first and third Monday, 12:30 p.m. to 1:30 p.m., Room E159, Education Wing.

*Interhospital Urology Grand Rounds*, first Tuesday, 5:30 p.m. to 6:30 p.m., Room E159, Education Wing.

*Peripheral Vascular Disease Conference*, third Tuesday, 6:00 p.m. to 7:00 p.m., Room E159, Education Wing.

*Neuropathology Conference*, third Tuesday, 5:00 p.m. to 6:00 p.m., Room S1169, Laboratory.

*Pulmonary Conference*, first and third Thursday, 12:00 noon to 1:00 p.m., Room E159, Education Wing.

*Cardiology Conference*, second and fourth Thursday, 12:00 noon to 1:00 p.m., Room E155, Education Wing.

*Cleft Palate Conference*, April 15th, 12:30 p.m. to 1:30 p.m., Room E159, Education Wing.

### LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

*Internal Medicine Grand Rounds*, each Tuesday, 8:00 a.m. to 9:00 a.m., Education I Auditorium.

*Anesthesiology Complications Conference*, each Tuesday, 7:00 a.m. to 8:00 a.m., Room 2E04, UAMS Hospital.

*Neuroradiology Course*, each Wednesday, 4:00 p.m. to 5:00 p.m., Radiology Conference Room.

*Radiology Continuing Education Lecture Series*, two Wednesdays each month, 6:00 p.m. to 7:30 p.m., Radiology Conference Room.

*Residents Anesthesia Seminars*, each Wednesday and Thursday, 3:30 p.m. to 4:30 p.m., Room 2E04, UAMS Hospital.

*Ophthalmology Problem Case Conference*, each Thursday, 4:00 p.m. to 6:00 p.m., UAMS Eye Clinic.

*Categorical Course in Radiology*, each weekday except Wednesday, 4:15 p.m. to 5:00 p.m.; Wednesday, 5:00 p.m. to 5:45 p.m., Radiology Conference Room.



## PERSONAL AND NEWS ITEMS

### OFFICE RELOCATED

Dr. Fred J. George of Jonesboro has moved his office to 1916 East Matthews. Dr. George specializes in Ophthalmology.

### MEDAL

Dr. Thomas Jefferson of Ozark has received the Army Commendation Medal. Dr. Jefferson was given the medal for distinguished service

during his assignment with the 97th General Hospital in Frankfurt, Germany.

### EOCH STAFF MEMBER

Dr. W. R. Oglesby, formerly of North Little Rock, has joined the staff of the Eastern Ozarks Community Hospital in Cherokee Village.

### MALVERN PHYSICIAN

Dr. Martin Key, a general surgeon, has begun

practice in Malvern. Dr. Key is formerly of Lincoln, Nebraska.

#### ASSOCIATION ANNOUNCED

Drs. James H. Arkins and Robert E. Holder have announced that Dr. Hunter M. Steadman, Jr., has joined the Bentonville Medical Associates, P.A.

#### 1981 HOSPITAL OFFICERS

The Washington Regional Medical Center staff has elected Dr. William Harrison of Fayetteville as medical chief of staff. Chief of staff-elect is Dr. Harrison Butler. Chairman of the Medicine Department is Dr. William Martin and chairman of the Surgery Department is Dr. J. Warren Murry.

#### PEDIATRICIAN MOVES

Dr. James D. Sykes, formerly of El Dorado, has joined Drs. Harry M. Harmon and L. Barry Allen at the Rogers Pediatric Clinic.

#### CANADIAN DOCTOR

Dr. Don Sible has moved to Forrest City from Edmonton, Alberta, Canada. Dr. Sible is a General Practitioner.

#### PAPER PRESENTED

Drs. Paul I. Wills, F.A.C.S., and Rowland Vernon of Fort Smith presented a paper entitled "Complications of Space Infections of the Head and Neck" at the Southern Section of the Triological Society in Fort Worth. The paper was accepted for publication in *The Laryngoscope*.

#### BALD KNOB GAINS PHYSICIAN

Dr. Mike Bridges of Bald Knob has been joined in his General Practice by Dr. William Allen. Dr. Allen previously practiced in Fort Smith and Little Rock.

#### DR. HOUSE

Dr. Roger House has begun practicing in McGehee as a Family Physician.

#### DERMOTT PHYSICIAN

Dr. Chu Iy Tan has opened an office for the practice of medicine in the Dermott Health Building.

#### STAFF OFFICERS

The staff at St. Joseph's Mercy Medical Center in Hot Springs has elected officers for 1981. Dr. Robert L. Hill was elected president of the medical and dental staff; Dr. I. David Rogers, president-elect; Dr. M. R. Springer, secretary-treasurer; Dr. Thomas H. Hollis, chairman of the Department of Medicine; and Dr. John H. Brunner, chairman of the Department of Surgery.

#### OUACHITA MEMORIAL HOSPITAL STAFF

New staff officers for the Ouachita Memorial Hospital in Hot Springs are as follows: chief of staff, Dr. L. R. McFarland; vice chief of staff, Dr. Jim Burton; secretary, Dr. James Griffin; Pediatric Department chairman, Dr. Margaret Harrison; Medicine Department chairman, Dr. David Rogers; Surgery Department chairman, Dr. Ron Kaler; and Obstetrical-Gynecological Department chairman, Dr. Deno Pappas; all of Hot Springs.

Dr. McFarland will also serve as chairman of the medical staff executive committee. Dr. Ronald Bracken is chairman of the utilization review committee; Dr. Doane Newton is chairman of the infection control committee; and Dr. John Trieschmann is chairman of emergency service. The physicians are all from Hot Springs.

#### 1981 ELECTIONS

Dr. Lawrence Price of Fort Smith has been elected as chief of staff at Sparks Regional Medical Center. Dr. Harold Mings of Fort Smith is the out-going chief of staff. Others serving will be Dr. Joe Dorzab as secretary and Dr. Gary Felker as vice chief of staff, both from Fort Smith.

#### PHYSICIAN SPEAKS

Dr. Deane Baldwin of Little Rock spoke at a recent meeting of the Central Arkansas Council for Children with Learning Disabilities. Dr. Baldwin's subject was children who are hyperactive and have attention difficulty.

#### CHIEF OF STAFF

Dr. Danny Holt of Pocahontas has been elected chief of staff at Randolph County Medical Center; Dr. Thomas B. DeClerk is outgoing chief of staff. Dr. Andrew Jansen has been elected as chief of staff-elect and secretary-treasurer.







## NEW MEMBERS

### **DR. DOAN V. BUI**

Dr. Bui, a native of Viet Nam, has been accepted as a member of the Cross County Medical Society.

After receiving his pre-med education at the University of Hanoi, Dr. Bui was granted his medical degree by the Saigon School of Medicine in 1961.

Before coming to the United States, Dr. Bui practiced fourteen years in Viet Nam. He served a flexible internship at the University of Arkansas College of Medicine in 1976-1977.

Dr. Bui practiced for two and one-half years in Gillett. His office for General Practice is now at the Parkin Clinic in Parkin.

### **DR. ROBERT L. ROSS**

A new member of the Jefferson County Medical Society, Dr. Robert Ross, is a native of Helena.

Dr. Ross was graduated from the University of Tennessee in 1972 and the University of Arkansas College of Medicine in 1976. His flexible internship was in Little Rock. From 1977 to 1980, Dr. Ross served in the residency program at the Louisiana State University Affiliated Hospitals in Shreveport.

Dr. Ross' specialty is Obstetrics and Gynecology. His office is located at 1702 West 42nd in Pine Bluff.

### **DR. KEITH HUGHES**

The Miller County Medical Society has accepted Dr. Keith Hughes as a member. He was born in San Diego, California.

After being graduated from the University of Texas in 1967, Dr. Hughes attended the University of Texas Southwestern Medical School in Dallas. His internship was at the Baylor University Medical Center in Dallas. At the same institution, he served a residency in Medicine.

From 1975 to 1977, Dr. Hughes was in the United States Army.

Board certified in Internal Medicine, Dr. Hughes specializes in Internal Medicine and Gastroenterology. His office is in the Southern Clinic at 300 East Sixth in Texarkana.

### **DR. RICHARD N. BROWN**

Dr. Richard Brown is a new member of the Sebastian County Medical Society. He was born in Shreveport, Louisiana.

In 1972, Dr. Brown was granted a B.S. degree by the East Texas State University and was graduated by the University of Texas Southwestern Medical School, Dallas, in 1976. His internship was in Pediatrics at the University of Texas Health Science Center, Bexar County Hospital System. Dr. Brown served a residency in Diagnostic Radiology at University of Texas Southwestern Medical School — Parkland Memorial Hospital in Dallas.

A board certified Radiologist, Dr. Brown is associated with Radiologists, P.A., at 318 North Greenwood in Fort Smith.

\* \* \* \*

The Washington County Medical Society has installed two new members:

### **DR. CARL ROBERT (C. R.) MAGNESS**

Dr. C. R. Magness is a native of El Paso, Texas.

Dr. Magness attended the University of Arkansas at Fayetteville for pre-med education. In 1975, he was graduated by the University of Arkansas College of Medicine.

Dr. Magness trained in General Surgery from 1975 to 1979 at the University Medical Center.

Now practicing General Surgery, Dr. Magness has his office at 160-A Poplar Street in Fayetteville.

### **DR. LARRY D. TUTTLE**

A native of Oklahoma City, Dr. Tuttle was graduated by the University of Oklahoma in 1973. He received his medical degree from the University of Oklahoma School of Medicine in Oklahoma City.

Dr. Tuttle served his internship and residency with the University of Arkansas — Area Health Education Center — Northwest in Fayetteville.

Dr. Tuttle's office for Family Practice is at 22 East Spring in Fayetteville.

\* \* \* \*

### **Interns and Residents**

#### **DR. ROBERT J. ADAMS**

Dr. Robert Adams has been accepted as a courtesy member by the Pulaski County Medical Society. He is an intern in the Neurosurgery Department at the University of Arkansas College of Medicine.



## OBITUARY

### **DR. H. B. OLDHAM**

Dr. H. B. Oldham of West Helena died January 26, 1981. He was born February 27, 1920.

A 1939 graduate of Arkansas State College, Dr. Oldham was graduated by the University of Arkansas College of Medicine in 1944. Before beginning practice in West Helena in 1949, he had practiced in Marvell. Dr. Oldham's specialty was General Medicine.

Dr. Oldham was a veteran of World War II.

Dr. Oldham is survived by his wife, Mrs. Agnes Oldham, two sons and a daughter.

### **DR. JOHN H. WILSON**

Dr. John H. Wilson died January 19, 1981; he was born March 15, 1909, in Columbia County.

In 1930, Dr. Wilson was graduated from Magnolia A & M College and in 1934 by the University of Arkansas College of Medicine. His internship was at the Missouri Pacific Hospital in Little Rock.

Dr. Wilson did post-graduate study in surgery at Harvard Medical School in Boston, the Cook

County Hospital of the University of Chicago, and Southwestern Medical Foundation in Dallas.

After two years of active service in the United States Army Medical Corps, Dr. Wilson was appointed chief surgeon and medical director of the Dyress Colony Medical Program and Hospital. In 1939, Dr. Wilson returned to Magnolia where he practiced General Medicine and General Surgery until his retirement in 1976.

Dr. Wilson served as chairman of the Council of the Arkansas Medical Society from 1948 to 1951. He was also a past president of the Columbia County Medical Society.

Dr. Wilson was an honorary Assistant Professor of Surgery at the University of Arkansas Medical Center. He was a founder and life member of the American Academy of Family Physicians. He held the title of Senior Fellow in the Southwestern Surgical Congress. Dr. Wilson had served as president of radio station KVMA in Magnolia and as a member of the First National Bank of Magnolia board of directors. He was a 32nd degree Mason and Shriner, a founding member of the Progress club (forerunner of the Magnolia Chamber of Commerce), and member and former chairman of the Southern Arkansas University Board of Trustees. Wilson Hall at the University was named in his honor. He was listed in Who's Who in America (Education and Medicine).

Dr. Wilson is survived by one daughter.





*Plan to Attend*  
the  
**ANNUAL MEETING**  
of the  
**ARKANSAS MEDICAL SOCIETY**

**April 26-29, 1981**

**Camelot Inn  
and  
Little Rock Convention Center**

★ ★ ★ ★

*Program Theme:*

*“Medical Update for the Practicing Physician”*

★ ★ ★ ★

# CONVENTION SECTION

## *Program For Annual Meeting*

April 26-29, 1981

Camelot Inn

Convention Center

Little Rock

Arkansas Medical Society



## CONVENTION OFFICIALS

**CHAIRMAN:** Frank E. Morgan, M.D., North Little Rock

**PROGRAM COMMITTEE:**

Thomas A. Bruce, M.D., Little Rock  
Neil H. Sims, M.D., Little Rock  
John H. Delamore, M.D., Fordyce  
Richard O. Martin, M.D., Paragould  
Ken Lilly, M.D., Fort Smith  
J. Larry Lawson, M.D., Paragould  
R. W. Ross, M.D., Fort Smith  
John M. Hestir, M.D., DeWitt  
C. Lynn Harris, M.D., Hope  
Paul A. Wallick, M.D., Monticello

**DISTRICT HOSTS: FOURTH COUNCILOR DISTRICT**

John P. Burge, M.D., Lake Village  
Raymond Irwin, M.D., Pine Bluff

**SCIENTIFIC EXHIBITS CHAIRMAN:** J. Larry Lawson, M.D., Paragould

**MEMORIAL SERVICE:** Frank E. Morgan, M.D., North Little Rock

## CONTINUING MEDICAL EDUCATION CREDIT

As an organization accredited for continuing medical education, the Arkansas Medical Society Committee on Scientific Programs certifies that this continuing medical education activity meets the criteria for hour-for-hour credit in Category I of the Physician's Recognition Award of the American Medical Association.

# General Information

## REGISTRATION

The registration desk will be located and open for registration as follows:

Sunday, April 26	Mezzanine of the Camelot Inn	8:00 a.m. to 5:00 p.m.
Monday, April 27	Galerie II, Convention Center	8:00 a.m. to 5:00 p.m.
Tuesday, April 28	Galerie II, Convention Center	8:00 a.m. to 5:00 p.m.
Wednesday, April 29	Mezzanine of the Camelot Inn	8:00 a.m. to 11:00 a.m.

Registration cards and badges will be prepared in advance for the officers of the Arkansas Medical Society and for the county society delegates. Delegates are requested to present credentials in proper form when registering.

All members and visitors are requested to register, as admission to all sessions will be by badge only. Bring your 1981 membership card to facilitate registration.

There will be a \$5.00 registration fee for non-member physicians.

Tickets will be sold for the western party on Monday evening. Tickets will be available at the Society registration desk.

## TELEPHONE SERVICE

As a convenience to physicians in attendance at the meeting, arrangements have been made for telephone service at the Society convention registration desk. It is suggested that you give the following information to your office personnel so that you may be contacted in case of emergency.

On Sunday and Wednesday, the Society staff may be reached through the Camelot Inn switchboard, 372-4371. Calls should be directed to the Medical Society convention registration desk.

Monday and Tuesday the number for the Society staff will be 372-5580.



## Memorial Service

A joint Society-Auxiliary Memorial Service will be held on Sunday, April 26, at 1:00 p.m. in the Camelot Inn. President Kemal Kutait will preside.

### Memorial Service Program

Invocation ..... *"The Lord's Prayer"*

Soloist

Scripture ..... Matthew V:14-16

Solo ..... *"The Holy City"*

Soloist

Scripture ..... Psalm I

Reading of names of Deceased Members of the Arkansas Medical Society

Dr. Kemal Kutait, President

Assisted by Mrs. Kutait and Dr. Warren Boop

Scripture ..... Proverbs XXXI

Reading of names of Deceased Members of the Arkansas Medical Society Auxiliary

Mrs. Warren Boop, President

Assisted by Dr. Boop and Mrs. Kutait

Scripture ..... Ephesians V:8b

Benediction ..... *"Eternal Life"*

Duet



## IN MEMORIAM

### SOCIETY MEMBERS

Dr. Olen W. Bridges, Searcy	Dr. Mac McLendon, Marianna
Dr. H. David Bryan, Benton	Dr. H. B. Oldham, West Helena
Dr. James W. Butts, Helena	Dr. Virgil L. Payne, Pine Bluff
Dr. E. J. Chaffin, Hughes	Dr. Lon E. Reed, Hot Springs
Dr. C. Frank Dodson, Jr., Little Rock	Dr. Allen R. Russell, Pine Bluff
Dr. James W. Freeland, Star City	Dr. Roy E. Schirmer, Fort Smith
Dr. Davis W. Goldstein, Fort Smith	Dr. W. D. Smith, Texarkana
Dr. Surinder N. Gupta, Hot Springs	Dr. Bill Dave Stewart, Little Rock
Dr. William B. Hodges, North Little Rock	Dr. Joseph B. Wharton, Jr., El Dorado
	Dr. John H. Wilson, Magnolia

### AUXILIARY MEMBERS

Mrs. Jacob P. Ellis, El Dorado	Mrs. Paul H. Jeffery, Batesville
Mr. William C. Fields, Sr., Marianna	Mrs. R. B. Robins, Camden and Little Rock
Mrs. John A. Hall, Clinton	Mrs. H. W. Thomas, Dermott
Mrs. George Harrod, Little Rock	Mrs. Joe Verser, Harrisburg
Mrs. Jacob B. Hesterly, Prescott	Mrs. Floyd Webb, Blytheville

### PRAYER BREAKFAST

The Committee on Medicine and Religion will hold a Prayer Breakfast at 7:15 a.m. on Tuesday, April 28, in the Camelot Inn.

Joe Norton, M.D., Little Rock, will be the breakfast speaker. Group singing will be led by C. R. Ellis, M.D., of Malvern.

All members of the Society and the Auxiliary are encouraged to attend the Prayer Breakfast. Tickets will be available at the Society's convention registration desk.

Fred Henker, M.D., Little Rock, is chairman of the Medicine and Religion Committee.

### FIFTY YEAR CLUB LUNCHEON

The Society will host a luncheon for members of the Fifty Year Club at 12:00 noon on Monday, April 27, in the Camelot Inn. Members of the Fifty Year Club may make reservations for the luncheon at the Society's convention registration desk.

Edwina Walls, Librarian-Archivist, History of Medicine, University of Arkansas for Medical Sciences, will speak on "Arkansas Medical History" with special emphasis on the Robert Watson History of Medicine Room at the Medical Center. Members of the Fifty Year Club are encouraged to bring to the meeting books published prior to 1900 of primary Arkansas source materials for donation to the History of Medicine Room at the Medical Center Library.

### **PAST PRESIDENTS' BREAKFAST**

A breakfast for past presidents of the Arkansas Medical Society will be hosted by the Society on Wednesday morning, April 29. The breakfast will begin at 7:30 a.m. and will be held in the Camelot.

### **SUNDAY EVENING PARTY**

Arkansas Blue Cross-Blue Shield will host a cocktail party for members of the Society and their spouses on Sunday evening, April 26. The party will begin at 6:30 p.m. and will be held in the Camelot Inn.

### **MONDAY EVENING SOCIAL EVENT**

A western-style party will be held in the Camelot Inn on Monday evening, April 27. This will be an informal affair with a buffet meal, entertainment by the Jefferson County Medical Auxiliary, and a band for dancing. Advance reservations and ticket sales will be handled by mail.

### **TUESDAY EVENING FUNCTIONS**

The inaugural ceremony on Tuesday evening of the Annual Session will not follow the format of previous years.

The inauguration of the president will be a staged event with the audience seated theatre-style. The inauguration will begin at 6:00 p.m. in the Camelot Inn. Purcell Smith, Jr., of Little Rock, will be installed as the 106th president of the Society.

Following the inaugural ceremony, the Council will host a reception for all members of the Society and Auxiliary. The reception will also be in the Camelot.

There will not be an inaugural banquet this year. Tickets will not be required for the Council-hosted reception.

All members of the Society and Auxiliary are encouraged to attend both the inauguration ceremony and the Council reception. The reception provides an opportunity for members to become better acquainted with the officers of the Society.





## *Business Sessions*

### **MEETINGS OF THE COUNCIL**

The Council of the Arkansas Medical Society will meet as follows:

Sunday, April 26	10:00 a.m.
Monday, April 27	7:30 a.m.
Tuesday, April 28	7:30 a.m.
Wednesday, April 29	8:30 a.m.
Wednesday, April 29	Immediately following adjournment of the House of Delegates (brief re-organizational meeting and group photograph of new officers)

The voting members of the Council are: the councilors, the president, the first vice president, president-elect, secretary, treasurer and immediate past president. The speaker, vice speaker, and other past presidents are members ex-officio without vote.

### **HOUSE OF DELEGATES**

The opening session of the House of Delegates of the Arkansas Medical Society will begin at 1:30 p.m. on Sunday, April 26, in the Camelot Inn. Speaker of the House of Delegates, Amail Chudy, M.D., will preside.

All items of business to be considered by the House must either be printed in the March issue of the Journal or submitted to the headquarters office in writing twenty days prior to the meeting. Any new business proposed during the sessions of the House must have a two-thirds vote of attending delegates for introduction.

Items of business will be referred by the Speaker of the House of Delegates to one of three reference committees. Open hearings on those items of business will be held by the reference committees following the session of the House. All members of the Society are welcome to attend the meetings of the reference committees and to express views on the various reports, resolutions, etc.

### **AGENDA**

#### **FIRST MEETING, HOUSE OF DELEGATES**

**1:30 p.m., Sunday, April 26**

1. Call to Order
2. Roll Call of Delegates
3. Report of Credentials Committee
4. Introduction of Guests
  - Mrs. Charles Prater, President, Southern Medical Association Auxiliary
  - Mrs. Warren Boop, President, Arkansas Medical Society Auxiliary
  - Mrs. Raymond E. Peoples, President-elect, Arkansas Medical Society Auxiliary
5. Address by AMA Representative Joseph F. Boyle, M.D., Los Angeles, Vice Chairman, Board of Trustees
6. Address of the President, Kemal Kutait, M.D., Fort Smith, President, Arkansas Medical Society
7. Adoption of minutes of the 104th Annual Session as published in the June 1980 issue of the Journal of the Arkansas Medical Society
8. Adoption of minutes of the special session of the House held November 16,

1980, as published in the January 1981 issue of the Journal of the Arkansas Medical Society

9. Old Business

A. S. Koenig, Jr., M.D., Chairman of the Constitutional Revisions Committee, will present the following proposed amendment to the Constitution for final consideration by the House:

ARTICLE VI, Section 2, Composition of Council

"The Council shall consist of the councilors, the president, first vice president, president-elect, secretary, treasurer, and immediate past president. The speaker and vice speaker of the House of Delegates and the past presidents shall be members ex-officio without vote, except that the immediate past president shall have a vote. There shall be two councilors from each district (to serve staggered terms of two years each) *which has two hundred members or less. In districts where there are more than two hundred members, there shall be an additional councilor for each additional one hundred members. The councilors will serve staggered terms of two years each.* All councilors shall have equal voting privileges. A majority of the voting members shall constitute a quorum.

(Note: Copy to be deleted in parentheses; new copy in italics.)

10. New Business

A. Report from Constitutional Revisions Committee

A. S. Koenig, Jr., M.D., Chairman of the Constitutional Revisions Committee, will present a report from his committee containing proposed revisions in the Constitution and Bylaws. After presentation as first reading to the House, the proposed amendments will be referred to a reference committee for consideration. (See Report of Constitutional Revisions Committee which appears elsewhere in this issue of the Journal.)

B. Reports from other Society Committees

11. Announcements of Vacancies on State Boards

*Arkansas State Medical Board.* A vacancy in the Third Congressional District will be created with the expiration of the term of Ross Fowler, M.D., of Harrison. (See Announcement of Board vacancy which follows.)

12. Selection of Nominating Committee for Society Officers

Members of the House meet by councilor district to select one nominating committee member from each district.

13. Recess until Wednesday.

**REFERENCE COMMITTEES**

Reference Committees are appointed by the Speaker of the House of Delegates to consider the various reports and resolutions. Reports published in the March issue of the Journal, as well as any reports and resolutions presented at the first meeting of the House on April 26, will be referred by the Speaker to the reference committees. The committees hold open meetings at 3:30 p.m. on the various items of business. Following the open hearings, the reference committees will hold executive sessions for the purpose of preparing recommendations and reports for the House of Delegates. Reports of the Reference Committees will be acted upon by the House of Delegates at the Wednesday session.



Members of the Reference Committees are:

**Reference Committee No. 1:**

Richard Martin, M.D., Paragould, Chairman

Gordon P. Oates, M.D., Little Rock

George W. Smith, M.D., El Dorado

Frank M. Lawrence, M.D., Russellville

Norton R. Ritter, M.D., Arkadelphia

John W. Vinzant, M.D., Fayetteville

Liaison Officer from the Council: Raymond Irwin, M.D., Pine Bluff

Observer: Tommy Koonce, University of Arkansas College of Medicine

**Reference Committee No. 2:**

Frank Morgan, M.D., North Little Rock, Chairman

J. Larry Lawson, M.D., Paragould

Horace L. Green, M.D., Pine Bluff

John Simpson, M.D., Hot Springs

Warren Douglas, M.D., Little Rock

Ken Lilly, M.D., Fort Smith

Liaison Officer from the Council: Morriss Henry, M.D., Fayetteville

Observer: Lee Archer, University of Arkansas College of Medicine

**Reference Committee No. 3:**

Harold Purdy, M.D., Little Rock, Chairman

Mahlon Maris, M.D., Harrison

Robert Nunnally, M.D., Camden

Ruth Steinkamp, M.D., Little Rock

Nathan F. Austin, M.D., Russellville

A. S. Koenig, III, M.D., Fort Smith

Liaison Officer from the Council: Charles F. Wilkins, Jr., M.D., Russellville

Observer: Rick Medlock, University of Arkansas College of Medicine

**STATE BOARD VACANCY**

**Arkansas State Medical Board**

A vacancy occurs in the Third Congressional District position on the Arkansas State Medical Board. Members from the counties in the district are urged to meet immediately following adjournment of the House of Delegates meeting on Sunday to vote for nominees. Nominations should be reported to the convention registration desk (only one nomination is required).

Ross Fowler, M.D., Harrison, is currently serving a term which will expire December 31, 1981. He is eligible for reappointment.

Counties in the Third Congressional District are: Baxter, Benton, Boone, Carroll, Crawford, Franklin, Johnson, Logan, Madison, Marion, Newton, Scott, Searcy, Sebastian, Van Buren and Washington.

**A G E N D A**  
**FINAL MEETING, HOUSE OF DELEGATES**  
**10:00 a.m., Wednesday, April 29**

1. Call to Order
2. Report of the Nominating Committee
3. Elections

Society officers:

President-elect  
First Vice President  
Second Vice President  
Third Vice President  
Secretary  
Treasurer  
Speaker of the House of Delegates  
Vice Speaker of the House of Delegates  
Councilors (one from each of the ten councilor districts)

1. Merrill J. Osborne, M.D., Blytheville
2. Paul Gray, M.D., Batesville
3. John Hestir, M.D., DeWitt
4. Raymond Irwin, M.D., Pine Bluff
5. George Warren, M.D., Smackover
6. Donald L. Duncan, M.D., Texarkana
7. R. Jerry Mann, M.D., Arkadelphia
8. W. Ray Jouett, M.D., Little Rock
9. Morriss M. Henry, M.D., Fayetteville
10. Charles F. Wilkins, M.D., Russellville

American Medical Association Delegate and Alternate

Delegate to the American Medical Association

Term of T. E. Townsend, M.D., Pine Bluff, expires December 31, 1981

Alternate Delegate to the American Medical Association

Term of Richard Pearson, M.D., Rogers, expires December 31, 1981

4. Reports of Reference Committees:

Committee Number 1: Richard Martin, M.D., Chairman

Committee Number 2: Frank Morgan, M.D., Chairman

Committee Number 3: Harold Purdy, M.D., Chairman

5. Supplemental Report of the Council: John P. Burge, M.D., Chairman

6. New Business

Vacancies on State Boards

Arkansas State Medical Board — Third Congressional District

Term of Ross Fowler, M.D., Harrison, expires December 31, 1981

7. Adjournment

**ARKANSAS FOUNDATION FOR MEDICAL CARE**

The annual meeting of the Arkansas Foundation for Medical Care will be held at 9:15 a.m. on Wednesday, April 29, in the Camelot Inn. The meeting is open to all physicians but only members of the Foundation may vote on items of business.



## *Scientific Exhibits*

Larry Lawson, M.D., Chairman of the Scientific Exhibits, has arranged a number of interesting scientific exhibits. Exhibits will be located in an area adjacent to the scientific lectures. All members are encouraged to visit the exhibits as they are an integral part of the scientific program.

The following exhibits will be on display:

"A Technique of Tonsillectomy Using Needlepoint Cautery"

Dr. Robert McGrew, Little Rock

"Hepatobiliary Imaging in the Assessment of Biliary Disease"

Dr. Charles M. Boyd, Little Rock

"Ocular Histoplasmosis"

Drs. Sloan Wilson and James Landers, Little Rock

"Social Security Disability Evaluation"

Mr. Tom South, Little Rock

"History of Medicine"

Miss Edwina Walls, Little Rock

"Rhinoplasty"

Dr. James F. Kyser, Little Rock

"Gynecologic Oncology"

Dr. Guy J. Photopulos, Memphis, Tennessee

"Cardiac Telemetry"

Dr. James E. Boger, Little Rock

"Arthroscopic Surgery of the Knee"

Dr. D. Bud Dickson, Little Rock

"Reconstructive Surgery of the Hip and Knee"

Dr. D. Bud Dickson, Little Rock

"Psoriasis"

Dr. Alan Menter, Dallas, Texas

"Oncology"

Dr. Jacob Amir, Little Rock

"Otolaryngological Problems"

Dr. James Suen, Little Rock

"Cosmetic Surgery in an Out-Patient Center"

Dr. Ellery C. Gay, Jr., Little Rock

"Electron Microscopy in Tumor Diagnoses"

Drs. Albert Kalderon and William Wetzell, Little Rock

"Nutritional Assessment of Surgical Patients"

Marjorie Brewster, Ph.D., Little Rock

# Distinguished Speakers



**Lloyd A. Wells, Ph.D., M.D.**  
Adult Psychiatry  
Mayo Clinic, Rochester



**Brian F. McCabe, M.D.**  
Professor and Head  
Department of Otolaryngology  
and Maxillofacial Surgery  
University of Iowa College of Medicine  
Iowa City

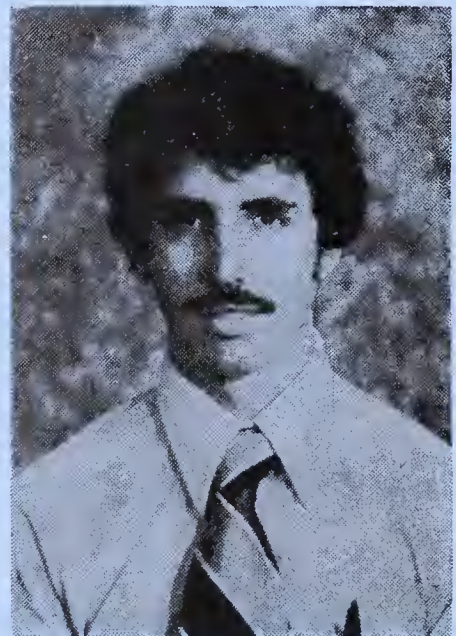
**Kenneth L. Mattox, M.D.**  
Associate Professor of Surgery  
Baylor College of Medicine  
Houston

**O. B. Harrington, M.D.**  
Thoracic and Cardiovascular  
Surgery Association  
Memphis

**Fred O. Henker, III, M.D.**  
Professor of Psychiatry  
University of Arkansas College of Medicine  
Little Rock



**David L. Barclay, M.D.**  
Gynecologic Oncology  
Little Rock



**W. Robert Thurlby, M.D.**  
Internal Medicine  
Millard-Henry Clinic  
Russellville



# Distinguished Speakers



**Roy Witherington, M.D.**  
Professor and Chief  
Section of Urology  
Medical College of Georgia  
Augusta

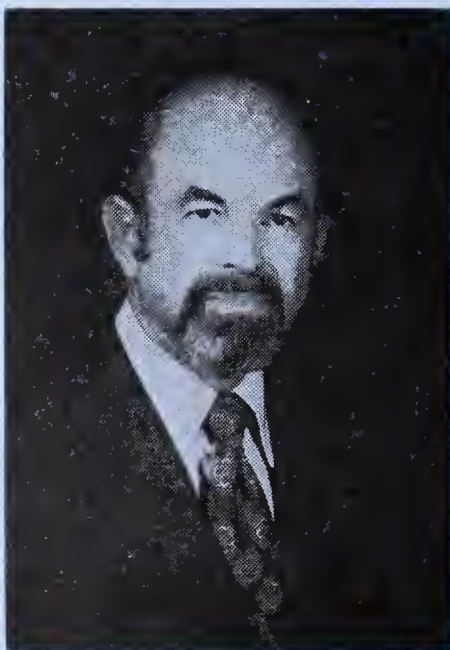


**Kenneth N. Walton, M.D.**  
Professor and Chairman  
Division of Urology  
Emory University School of Medicine  
Atlanta

**Glen F. Baker, M.D., ET AL**  
Department of Pathology  
University of Arkansas College of Medicine  
Little Rock

**James A. Duke, M.D.**  
Professor of Surgery  
University of Texas Medical School  
Houston

**Michael J. Weber, M.D.**  
Assistant Professor  
Department of Orthopaedics  
University of Arkansas College of Medicine  
Little Rock



**James A. Williams, J.D.**  
Legal Counsel  
American Physicians Insurance  
Dallas



**Nathan J. Smith, M.D.**  
Professor, Department of  
Pediatrics and Sports Medicine  
University of Washington  
Seattle

## *Scientific Program*

### GENERAL SESSION

#### Program Theme:

*"Medical Update for the Practicing Physician"*

### **Monday Morning, April 27**

Presiding: Frank E. Morgan, M.D., Second Vice President

- 9:00 a.m. "Update on Penile Lesions of General Interest"  
Roy Witherington, M.D., Professor and Chief, Section of Urology,  
Medical College of Georgia, Augusta
- 9:30 a.m. "Father of Medicine, P. O. Hooper"  
Fred O. Henker, III, M.D., Professor of Psychiatry, University of Ar-  
kansas College of Medicine, Little Rock
- 10:00 a.m. "CPC of Breast Cancers"  
Drs. Glen F. Baker, et al, Department of Pathology, University of Ar-  
kansas College of Medicine, Little Rock
- 10:30 a.m. Intermission
- 10:50 a.m. "What's New and Over the Horizon in Trauma Management"  
Kenneth L. Mattox, M.D., Associate Professor of Surgery, Baylor Col-  
lege of Medicine, Houston
- 11:20 a.m. "Coronary Artery Disease in the Elderly"  
O. B. Harrington, M.D., Memphis

### **Monday Afternoon, April 27**

Presiding: Richard O. Martin, M.D., First Vice President

- 1:30 p.m. "Lyme Arthritis — Case Presentation and Review"  
W. Robert Thurlby, M.D., Russellville
- 2:00 p.m. "Forms of Sensorineural Deafness for Which We Have a Treatment  
Today"  
Brian F. McCabe, M.D., Professor and Head, Department of Otolaryn-  
gology and Maxillofacial Surgery, University of Iowa College of  
Medicine, Iowa City
- 2:30 p.m. Intermission
- 3:00 p.m. "Management of Nutritional Problems"  
James A. Duke, M.D., Professor of Surgery, University of Texas  
Medical School, Houston
- 4:00 p.m. "The Differential Diagnosis of 'Functional' Complaints"  
Lloyd A. Wells, Ph.D., M.D., Department of Adult Psychiatry, Mayo  
Clinic, Rochester

### **Tuesday Morning, April 28**

Presiding: Harold Purdy, M.D., Third Vice President

- 9:00 a.m. "Paranoia Malpracticum — Symptoms, Cause, and Cure"  
Mr. James A. Williams, Legal Counsel, American Physicians Insur-  
ance, Dallas



- 9:30 a.m. "Closed Intramedullary Nailing of Femoral Fractures"  
Michael J. Weber, M.D., Assistant Professor, Department of Orthopaedics, University of Arkansas College of Medicine, Little Rock
- 10:00 a.m. Intermission
- 10:20 a.m. "Update on Common Gynecologic Malignancies"  
David L. Barclay, M.D., Little Rock
- 10:50 a.m. "CAT Scanning in Urology"  
Kenneth N. Walton, M.D., Chairman, Division of Urology, Emory University School of Medicine, Atlanta
- 11:20 a.m. "Some Medical Concerns in Sports Medicine"  
Nathan J. Smith, M.D., Professor, Department of Pediatrics and Sports Medicine, University of Washington, Seattle



## *Group and Specialty Meetings*

### **Monday, April 27**

The Arkansas Chapter of The American College of Surgeons will meet at 12:00 noon on Monday, April 27, for a luncheon meeting in the Camelot Inn. Kenneth L. Mattox, M.D., Associate Professor of Surgery, Baylor College of Medicine, Houston, will speak.

### **Tuesday, April 28**

All Meetings in Camelot Inn/Little Rock Convention Center Complex

The Arkansas Academy of Ophthalmology will meet at 9:00 a.m. on Tuesday, April 28. The visiting professor will be Patrick O'Connor, M.D., of San Antonio. His discussion topic will be "Neuro-ophthalmology." There will be a luncheon at noon.

The Otolaryngology Section of the Arkansas Medical Society has scheduled a meeting to begin at 9:00 a.m. on Tuesday, April 28. Brian F. McCabe, M.D., Professor and Head, Department of Otolaryngology and Maxillofacial Surgery, University of Iowa College of Medicine, Iowa City, will speak on "Meniere's Disease, Otosclerosis, Electronystagmography, and Dizziness in Children." A luncheon will be served at noon.

The Arkansas Urologic Society will meet at 11:30 a.m. on Tuesday, April 28. Cocktails and luncheon will be followed by a scientific session. Roy Witherington, M.D., Professor and Chief, Section of Urology at Medical College of Georgia, Augusta, will speak from 1:30 to 2:30 p.m. From 2:30 to 3:30 p.m., there will be a pyelogram hour.

Plastic Surgeons will meet for a luncheon and business meeting on Tuesday, April 28, beginning at 12:00 noon.

The Arkansas Society of Pathologists will meet at 12:30 p.m. on Tuesday, April 28, for a luncheon and business meeting.

The Neurosurgery Section of the Arkansas Medical Society will hold its annual business meeting at 12:00 noon on Tuesday, April 28. Dr. Ron Williams

will report on the meeting of the Council of State Neurosurgical Societies held in conjunction with the Congress Meeting in the fall of 1980. There will be a remembrance of the late Dr. Surinder Gupta.

The Arkansas Chapter, American Academy of Pediatrics, will meet at 12:00 noon on Tuesday, April 28. There will be a scientific session and luncheon. Dr. Nathan Smith, Professor, Department of Pediatrics and Sports Medicine, University of Washington in Seattle, will be the speaker.

The Arkansas Academy of Family Physicians has scheduled a meeting for April 28 beginning at 12:00 noon. "Urinary Tract Infection" will be the topic of a speech by Kenneth N. Walton, M.D., Chairman, Division of Urology, Emory University School of Medicine, Atlanta, Georgia. A business meeting will follow.

The Arkansas Chapter, The American College of Obstetricians and Gynecologists will have a luncheon and business meeting Tuesday, April 28, beginning at 12:00 noon.

The Arkansas Orthopaedic Society will hold its annual business meeting at a luncheon beginning at 12:00 noon on Tuesday, April 28.

The Arkansas Society of Internal Medicine will hold a luncheon meeting on Tuesday, April 28, beginning at 12:00 noon. Bob Doherty of the American Society of Internal Medicine staff will be the luncheon speaker.

A scientific program presented by residents at the University of Arkansas for Medical Sciences will follow the luncheon business meeting.



## *Arkansas Medical Society Auxiliary*

### ***The Spice of Life***

The 57th Annual Session of the Arkansas Medical Society Auxiliary will be held April 26-28, 1981, in the Camelot Inn, Little Rock.

The following is an outline of the tentative convention schedule:

Registration hours, Mezzanine, Camelot Inn

Sunday	1:00 p.m. to 4:00 p.m.
Monday	8:00 a.m. to 10:00 a.m.
Tuesday	8:00 a.m. to 10:00 a.m.

### **AMA-ERF**

Booth will be open near the registration desk.

### **HOSPITALITY SUITE**

(Location to be posted at registration desk)

Sponsored by the Pulaski County Medical Society Auxiliary, as a meeting place for spouses of Society members.

Sunday	2:00 p.m. to 4:00 p.m.
Monday	9:00 a.m. to 11:00 a.m. 2:00 p.m. to 4:00 p.m.
Tuesday	9:00 a.m. to 11:00 a.m. 2:00 p.m. to 4:00 p.m.



**SUNDAY, APRIL 26**

- 1:00 p.m. Joint Memorial Service with the Arkansas Medical Society
- 2:00 p.m. Pre-Convention Board Meeting, Camelot Inn. Joint meeting with president-elect for State officers, State committee chairmen, county presidents, county presidents-elect, and all NEW State Board members.
- 6:30 p.m. Cocktail Party, hosted by Blue Cross-Blue Shield

**MONDAY, APRIL 27**

- 6:30 a.m. Shape-Up-For-Life 2-Mile Walk/Run, for Auxilians and spouses. (Pre-registration in Ark-Map for free Shape-Up-For-Life T-shirt)
- 7:00 a.m. Finish Line Juice/Breakfast for Walk/Run participants, compliments of Andy's Restaurant, 4th and Center Street
- 8:00 a.m. Past Presidents' Breakfast, Camelot Inn
- 8:00 a.m. County Presidents'-Elect Breakfast, Camelot Inn
- 9:00 a.m. Continental Breakfast, Auxiliary Members, Camelot Inn
- 9:30 a.m. Opening General Session, Camelot Inn  
Mrs. Warren Boop, President, presiding  
Guest Speaker: Mrs. Charles Prater, President, Southern Medical Association Auxiliary
- 12:00 noon Luncheon-Style Show, Barbara/Jean, Ltd., 7811 Cantrell Road  
Transportation provided, from and to Camelot Inn
- 2:30 p.m. Special Interest Activities. Pre-registration forms for golf, tennis, to cooking class, Art Center tour, etc., will be in Ark-Map
- 4:00 p.m.
- 6:30 p.m. Country-Western Cocktail-Dinner, Camelot Inn  
Dress: Casual, jeans  
Skit presented by the Jefferson County Medical Society Auxiliary

**TUESDAY, APRIL 28**

- 7:15 a.m. Prayer Breakfast for members of the Arkansas Medical Society and Auxiliary
- 9:00 a.m. Continental Breakfast, Auxiliary Members, Camelot Inn
- 9:30 a.m. Second General Session, Camelot Inn  
Mrs. Warren Boop, President, presiding  
Guest Speaker: Mrs. Harry Dvorsky, President-Elect, American Medical Association Auxiliary
- 12:30 p.m. Luncheon, Little Rock Club, Union Bank Building  
Awards: Doctor's Day, AMA-ERF, Membership  
Installation of Officers
- 4:00 p.m. Sherry Party, Dibrell House, 1400 Spring Street  
to Sponsored by the University of Arkansas Medical Sciences Library
- 5:30 p.m. for those interested in the history of medical science.
- 6:00 p.m. Inaugural Ceremony followed by reception hosted by Council of the Arkansas Medical Society

Arkansas Medical Society Auxiliary President: Mrs. Warren Boop, Little Rock

Convention Chairman: Mrs. Paul Cornell, Little Rock

Convention Co-Chairman: Mrs. Jack Downs, Little Rock

## *Technical Exhibits*

The business firms who purchase exhibit space at our Annual Session contribute a great deal to the financing as well as to the educational aspects of the meeting. The number of visits to the technical exhibits is the only criterion by which these companies can judge the value they receive from the investment in booth rental, displays and employees' time. You will be rewarded for the time you spend visiting the exhibits. Following are descriptions of displays to be featured.

### **BOOTS PHARMACEUTICALS, INC.**

At the 1981 meeting of the Arkansas Medical Society, Boots Pharmaceuticals, Inc., will be featuring Lopurin™. Representatives will be on hand to answer questions about this or any of our other ethical pharmaceuticals.

### **SMITH, KLINE & FRENCH LABORATORIES**

Representatives will be on hand to answer your specific questions and to provide information on our products and services.

### **AMERICAN PHYSICIANS INSURANCE EXCHANGE**

API — professional liability insurance for Arkansas physicians. A completely 100% physician owned-controlled insurance company dedicated to giving the Arkansas physicians guaranteed protection.

### **ORTHO PHARMACEUTICAL CORPORATION**

Ortho Pharmaceutical Corporation is proud to present the most complete line of medically accepted products for the control of conception and the treatment of vaginitis. In addition, Ortho is pleased to present a product for the control of diarrhea.

### **MEYER F. MARKS, INC.**

AMS Life Insurance Plan administered by Meyer F. Marks, Inc., Post Office Box 7267, Little Rock, Arkansas 72217, will furnish information regarding the program. Current limits have been increased allowing the purchase of up to \$300,000 of insurance through the plan. Change of benefits for Professional Corporations also available.

### **DICTAPHONE CORPORATION**

Dictaphone will introduce "Dictamation" which is a new concept in the dictating industry, featuring a new and exciting line of desktop units and portables.

### **BOEHRINGER INGELHEIM, LTD.**

Boehringer Ingelheim will feature the following products: Catapres® (clonidine hydrochloride), Combipres® (clonidine hydrochloride 0.1 mg or 0.2 mg and chlorthalidone 15 mg), Alupent® (metaproterenol sulfate) in its many dosage forms, Dulcolax® (bisacodyl), Serenitil® (mesoridazine) as the beyslate, Torecan® (thiethylperiazine), Persantine® (dipyridamole) and Preludin® (phenmetrazine hydrochloride). Representatives will be on hand to answer questions about these and any of our other ethical pharmaceuticals.

### **SOUTHERN MEDICAL ASSOCIATION**

Southern Medical Association will have on display information concerning their various continuing medical education programs, including the Dial Access System, the SMA Telecourse System, and the SOUTHERN MEDICAL JOURNAL. SMA will also be actively soliciting membership in the organization.

### **LINDE HOMECARE MEDICAL SYSTEMS, INC.**

We will have a complete line of Oxygen and Therapy equipment for the patient at home. Come by booth #13 and get full information from our representatives.

### **UNITED STATES AIR FORCE HEALTH PROFESSIONS**

Air Force physicians will be available to discuss opportunities for physicians with the Air Force Medical Corps. Information on pay, rank, assignments and other benefits, along with specific literature, will be available. Drop by our booth to find out how you and your family can benefit from our unique life style.

### **BRISTOL LABORATORIES**

You are cordially invited to visit Bristol Laboratories' exhibit. Our representatives at the booth welcome the opportunity to answer your questions concerning the Bristol line of products featuring: Amikin® (amikacin sulfate); Bristoject® (Bristol Emergency Medication System); Cefadyl® (sterile cephalapirin sodium); Kantrex® Injection (kanamycin sulfate injection); Naldecon® (anti-histamine decongestant); Polycillin® (ampicillin); Polymox® (amoxicillin); Prostaphlin® (oxacillin sodium); Salutensin®/Salutensin-Demi™ (hydroflumethiazide, reserpine antihypertensive formulation); Stadol® (butorphanol tartrate); Tegopen® (cloxacillin sodium); and Tetrex® (tetracycline phosphate complex).

### **SOUTHWESTERN BIOMEDICAL ELECTRONICS**

Spacelabs patient monitoring system, Davol electro-surgical generator, MRL defibrillator, Clay Adams blood cell counter, and non-invasive blood pressure monitor will be displayed at booth #16.

### **HARPER SYSTEMS COMPANY**

Representatives of the Harper Systems Company will have Norelco and Sanyo dictation equipment and ITT and IWATSO telephone equipment on display at booth #17.

### **TAB PRODUCTS COMPANY**

TAB PRODUCTS is a national company which is the leader in lateral filing systems of all types. We will be highlighting our lateral filing equipment and color coded systems for medical records.

### **PROCTER & GAMBLE**

The Procter & Gamble exhibit features clinical information on our pharmaceutical product, Didronel, a diphos-



phonate indicated for symptomatic Paget's disease of bone and for the prevention and treatment of heterotopic ossification due to spinal cord injury and total hip replacement.

#### A. H. ROBINS COMPANY

You are cordially invited to visit the A. H. Robins exhibit and meet our representatives who will welcome the opportunity to discuss products of interest with you.

#### ARKANSAS BLUE CROSS-BLUE SHIELD

The theme for our 1981 booth will be "Cost Containment and Health Education."

#### DODSON INSURANCE GROUP

Dodson offers yearly savings on Workers' Compensation insurance which have ranged to more than 37% for insured physicians in Arkansas. Standard policies at prevailing rates with prompt local claim service. Ask us for details at the Technical Exhibits.

#### STUART PHARMACEUTICALS

Stuart Pharmaceuticals welcomes members and guests to the Arkansas Medical Society. We extend a cordial invitation to visit our exhibit featuring displays and literature for: Mylanta®/Mylanta®-II, Alternagel®, Sorbitrate®, Mylicon®, Kasof™, Dialose® Plus, and Effersyllium®.

Our representatives will be glad to answer any questions on Stuart products and accept sample requests.

#### BURROUGHS WELLCOME COMPANY

Representatives of Burroughs Wellcome Company cordially invite you to visit Booth No. 26. Our exhibit will feature the latest product information available from Burroughs Wellcome Company and provide educational material of interest to all physicians. We will be pleased to answer your inquiries on any products of interest to members and guests.

#### COMMERCIAL NATIONAL BANK

The exhibit will include displays of bank services available such as leasing, financing, etc. The booth will be attended by selected bank officers.

#### RATHER, BEYER & HARPER

Representatives of Rather, Beyer and Harper will have brochures and all information on the Arkansas Medical Society's Group Insurance Plans. The Income Protection Plan, which has been in effect since 1947, is now being issued on a guaranteed renewable basis. Income Protection Benefits are now up to \$2,167 per month. Records will be available so that each physician may review his insurance coverages and what he is eligible to apply for as a member of the Arkansas Medical Society.

#### UNITED STATES ARMY MEDICAL DEPARTMENT

The U. S. Army Medical Department representatives will provide information on career opportunities in the Army Medical Department.

#### INTERNATIONAL MEDICAL ELECTRONICS

International Medical Electronics, Ltd., manufacturers

of sophisticated medical equipment, featuring Magna-therm short-wave diathermy unit with two detachable heads.

#### FIRST VARIABLE LIFE INSURANCE COMPANY

Specialists in the investment, design, and implementation of Pension and Profit Sharing Plans.

The Investment Accounts managed by First Variable continue to provide consistent above-average investment results. Whether you want a guaranteed rate of return, a High Yield Bond Account, or a Common Stock investment, First Variable has the performance record.

Retirement Systems offers complete actuarial and plan administrative services on a fee-only basis.

Come by our booth and see how you can benefit from our experience.

#### MERCK SHARP AND DOHME

Merck Sharp and Dohme cordially invites you to visit their exhibit featuring several products from their extensive line of pharmaceuticals. Representatives in attendance will be pleased to answer any questions you may have. Inquiries about our professional, informational, and educational services are welcomed.

#### PROFESCO CORPORATION

The S.M.A. Telecourse system offers the Practicing Physician a method of continuing medical education in the convenience of his home or office, utilizing the latest video cassette technology. It can include all the equipment you need and it's tax deductible. Most important of all, it is fully accredited and allows you to choose the topics best suited to your practice.

#### NATIONAL MEDICAL RENTALS

Our exhibit will feature liquid oxygen systems needed in the home; baby watch monitors; literature on all services we provide for the home patient with over seven store locations in Arkansas.

#### SEQUOIA GROUP, INC.

The valuable approach to medical management! Sequoia Medical Systems provide complete hardware, software, installation, training, documentation, and maintenance support. We're the unique system, nationwide.

#### WM. T. STOVER COMPANY, INC.

Stover Company invites you to visit its booth. We will feature examination furniture, electrocardiograph equipment, and supplies.

\* \* \* \*

The Arkansas Medical Society expresses appreciation to the following companies for educational grants:

Eli Lilly and Company

Mead Johnson Nutritional Division

Parke-Davis

Roche Laboratories

Schering Corporation

USV Laboratories

## House of Delegates Business Affairs

Business items printed below are brought to the attention of individual members and the county medical societies. The items reported here represent those received in time for publication in advance of the meeting. All reports will be referred to reference committees. Members are urged to attend the open hearings of the reference committees to express their views. Reference committee hearings are scheduled for 3:30 p.m. on Sunday, April 26.

### OLD BUSINESS

The following proposed amendment to the Constitution and Bylaws was approved on first reading by the House of Delegates during the 1980 Annual Session. It will be presented to the House of Delegates for final vote on Sunday, April 26, 1981.

It is proposed that the wording of Article VI, Section 2, Composition of the Council, be amended as follows:

The Council shall consist of the councilors, the president, first vice president, president-elect, secretary, treasurer, and immediate past president. The speaker and vice speaker of the House of Delegates and the past presidents shall be members ex-officio without vote, except that the immediate past president shall have a vote. There shall be two councilors from each councilor district (to serve staggered terms of two years each) *which has two hundred members or less. In districts where there are more than two hundred members, there shall be an additional councilor for each additional one hundred members.* The councilors shall serve staggered terms of two years each. All councilors shall have equal voting privileges. A majority of the voting members shall constitute a quorum.

(Note: Copy to be deleted in parentheses; new copy in italics.)

### NEW BUSINESS

#### ANNUAL COMMITTEE REPORTS

##### Committee on Medical Legislation

##### James R. Weber, M.D., Chairman

Last year (1980) was an off year and there was no regular meeting of the Arkansas General Assembly. As of the writing of this report, the 73rd Session of the Arkansas General Assembly is in progress.

Prior to the start of the legislative session, the Legislative Committee met and reviewed the issues that we anticipated to be forthcoming during this session. The recommendations pertaining to legislation were presented to the House of Delegates at the winter meeting held in November.

Since the legislative session has started, we have had an opportunity to review many bills that could possibly have an impact on medicine, and have voiced our concerns to our legislators. In many cases, we have been able to make minor changes in the legislation through our discussions with legislators and individuals supporting various bills. At the present time, we know of no legislation that has been introduced that will present major confrontations at the Capitol.

We, by all means, encourage all of our members to read our Legislative Alert, which is our publication during the legislative session to keep our members informed on the major pieces of legislation affecting health care that have been introduced. There are times when it is extremely important for physicians across the State to contact their legislators pertaining to legislation and the Alert will be our system of notifying the members and asking their assistance.

The "Physician of the Day" program whereby physicians volunteer to serve one day at the Capitol during the legislative session is a valuable service, both to medicine and to the Legislature. Those physicians who serve have an opportunity to meet legislators, be introduced in both House and Senate and have an opportunity to see firsthand the functioning of the Legislature. This service provided by our physicians is extremely good public relations with our elected officials and those physicians who serve are to be congratulated.

The success that organized medicine has in the legislative activities is a direct result of the activities of the physicians across the State in having a good rapport with their legislators, not only when the Legislature is in session but throughout the year. Our legislators work hard to develop good, reasonable, and fair laws for the people of Arkansas and I am hopeful that all members will endeavor to develop a good rapport with all their elected officials.



**Committee on Public Health  
(Rural Health)**

**Ben N. Saltzman, M.D., Chairman**

Medical Society activities this past year, as was the case the preceding year, have been many and varied. The public has been made aware through the various news media that there is a rural health problem and that solutions proposed do not always conform to the ideas of the medical profession. The Medical Society has acted as a committee of the whole this past year in that many physicians have served on committees appointed by the Governor to help resolve some of the problems. The Executive Committee of the Arkansas Medical Society has met regularly with members of the Office on Rural Health of the State Health Department to develop lines of communication for better understanding. The Chairman of the Committee on Public Health has met with this group on occasion. A better understanding has resulted.

The Governor-elect of Arkansas appointed a committee of the members of the Medical Society to help in the transition phase. This committee has functioned and is continuing to function. Because of all this activity, the Committee on Public Health has not been convened. However, the Chairman has consulted with individual members for advice throughout the year. He continues to head the office of Rural Medical Development Programs in the College of Medicine, University of Arkansas for Medical Sciences. He is part of a Rural Health Committee in the College of Medicine which seeks cooperation with other organizations in providing better health care for our rural population. He continues to plan, organize and implement continuing education programs for family physicians over the State. He serves as Director of the Flexible Internship Program and promotes the advantages of practice in rural communities over the State. He continues to work with the Co-operative Extension Service and serves on a 4-H Foundation Board of Directors. Recently the first phase of construction of a 4-H Center was completed at Ferndale, Arkansas. This facility serves not only 4-H members but provides the entire State with a meeting facility for civic and professional organizations.

The Chairman continues to represent the Medical Society on the State Health Manpower Board. Recently, he has served as Chairman of

a Nursing Task Force Committee. He has completed an eight-year term on the State Board of Health. He has attended several meetings concerned with hazardous waste disposal in the State.

As stated in a previous report, he participated in the third National Conference on Rural Primary Care as a workshop moderator when the conference was held in Little Rock, March 2-5, 1980. This year he will attend the fourth National Conference which will be held in Denver on March 8-11, 1981.

During the year, the Chairman participated with the Co-operative Extension Service in a health education program involving the citizens of Sheridan, Arkansas. The program involved over 300 people in the community in Health Hazard Appraisal and Lifestyle change. As president of the Arkansas Endowment for the Humanities, he participated in a conference on farm families at DeGray Lodge on April 9 and 10. He attended the American Medical Association National Conference on Rural Health in Boston, Massachusetts, April 17-19, 1980. He helped plan and participated in the Arkansas Rural Health Conference held August 20, 1980, in Little Rock. About 400 people from over the State were involved in the conference.

The Chairman serves on an Advisory Committee to a Task Force on Nursing Education sponsored by the Southern Regional Educational Board. He continues to provide Medical Society input into the activities of voluntary health associations, including the Arkansas Lung Association, the Arkansas Division of the American Cancer Society, the Arkansas Affiliate of the American Heart Association, the Arkansas Association for Retarded Citizens and the Arkansas Society for Clinical Hypnosis. He serves on an Advisory Committee to the Arkansas Rehabilitation Institute. He continues to serve on the Governor's Developmental Disability Planning Council and the Advisory Council to Comprehensive Community Mental Health Planning. He serves on the Aldersgate Advisory Committee. He now serves as Vice President of the Senior Board of the Florence Crittenton Home.

During the past year, the Chairman has accompanied the Dean of the College of Medicine, Dr. Thomas Bruce, to various county medical society meetings, determining their needs and encouraging the recruitment of physicians to their

communities and providing information to facilitate such recruitment.

The year has been a busy one. A better sense of cooperation exists among the various health providing agencies. More physicians are going into smaller communities to replace physicians who are retiring or who have passed away. The future looks good.

**Sub-Committee on Maternal and Child Welfare**  
**E. A. Shaneyfelt, M.D., Chairman**

The committee met two times during the year, both times at the Arkansas Children's Hospital in Little Rock. The committee, composed of Drs. Virgil Hayden, R. Kingsley Bost, Robert Arrington, and E. A. Shaneyfelt, Chairman, met in the conference room.

Dr. Arrington, Associate Professor and Director of the Department of Neonatology, gave an overview of the regionalization of obstetrical and neonatal care in Arkansas. Dr. Arrington informed us of the great strides that were being made. The Arkansas Children's Hospital newborn transport van and the transport service has transported 418 cases from September 1978 to December 1980. The continuing education programs in newborn and maternal care which have been conducted in Little Rock and in several cities around the State have helped train many needed nursing personnel, but the surface is only scratched. Definite improvement in care for mothers and babies has occurred in Arkansas in the past five years. Tertiary newborn care is much more available, newborn transport vans at Arkansas Children's and St. Vincent Infirmary are very active. Intermediary care is available and has increased in several cities around the State, and large numbers of nurses have been trained in the week-long courses on newborn or maternal care. The neonatal mortality in Arkansas decreased from 16 per 1,000 live births in 1965 to 13 per 1,000 live births in 1975—a three percent reduction over ten years. For the years during which the above noted improvements were being developed, a further decline from 1975's 13 per thousand to eight per thousand in 1979 occurred—a five percent reduction in four years. I believe our committee and the Medical Society should push for continuation of this trend.

We also met with Dr. Robert H. Fiser, Professor and Head of the Department of Pediatrics at the University Medical Center. It was felt that

we should get our obstetrical members of the committee to contact the head of the Department of Obstetrics and the head of the Department of Family Practice to meet with this committee at the annual meeting of the Arkansas Medical Society and to come up with solid recommendations and adopt some policies and goals for regionalization. The committee felt this thrust and input should be from the Society and not from the State Health Department or any federal bureaucracy. Dr. Arrington and Dr. Fiser have agreed to come. We are contacting the Obstetrical Department and the Family Practice Department of the University to try to have them there for their input.

**Sub-Committee on Tuberculosis**  
**Donald L. Miller, M.D., Chairman**

Members of the Sub-Committee on Tuberculosis of the Arkansas Medical Society each received a copy of Resolution No. 3 passed by the Arkansas House of Representatives during its special session this past winter. This House Resolution urges the State Health Department to restore full services to patients with tuberculosis and also chronic chest disease patients. It is my feeling, also, as Chairman of the Sub-Committee on Tuberculosis, that services should be available through chest clinics and designated community hospitals for patients with chronic chest diseases other than tuberculosis as has been customary and expected for many years.

Our Sub-Committee did not meet during 1980, but I thought this resolution should be brought to the attention of the Medical Society for information and for consideration.

**HOUSE RESOLUTION NO. 3**

Urging the State Health Department to Utilize Additional Funds Provided by the First Extraordinary Session of the Seventy-Second General Assembly of the State of Arkansas to Restore Full Services to Tuberculosis and Chronic Chest Disease Patients.

WHEREAS, at the time the State of Arkansas abolished the Tuberculosis Sanatorium at Booneville and phased out State institutional services for tubercular and chronic chest disease patients, it was the intent of the General Assembly that the State Health Department establish and operate a program of financial assistance to defray hospital, medical, drug, and related medical expenses benefiting the tubercular and chronic chest disease patients who had formerly received



care at the Booneville Sanatorium and the McRae Sanatorium, which had been phased out several years previously; and

WHEREAS, the Health Department has provided such services benefiting tubercular and chronic chest disease patients until the severe cut-back in anticipated funds for the support of the Health Department, which led to announcements that the Department must cut services in many areas, among which will be a cutback to limit the special medical services program to include only tuberculosis patients, without services being provided persons suffering from chronic chest diseases; and

WHEREAS, this First Extraordinary Session of the Seventy-Second General Assembly is considering, and has passed, legislation providing substantial additional support to the Public Health Fund and the State Health Department for the remainder of the current fiscal biennium, and therefore should enable the State Health Department to restore budget cutbacks in the various service areas;

NOW THEREFORE, BE IT RESOLVED by the House of Representatives of the First Extraordinary Session of the Seventy-Second General Assembly of the State of Arkansas:

THAT in the adoption of this Resolution, the General Assembly confirms the policy of this State that the State Health Department provide a program of financial assistance for hospitalization, drugs, and related medical expenses for the treatment and care of tubercular and chronic chest disease patients who would have been eligible to receive such services at a state supported institution prior to the phasing out of the State institutional services for these patients. The General Assembly is mindful of the proposed cutbacks by the Health Department during the current biennium whereby the Health Department, due to lack of funds, proposes to restrict expenditures for tubercular and chronic chest disease cases to those suffering from tuberculosis only. In view of the fact that the General Assembly has provided additional funding, under the provisions of legislation enacted at this First Extraordinary Session to supplement the operating funds of the State Health Department during the current biennium, it is the intention of the General Assembly in providing said additional operating funds that a portion thereof be used to

restore State Health Department services to a level no less than was provided in 1978-79 for assistance to tubercular and chronic chest disease patients who are otherwise eligible for State Health Department assistance.

BE IT FURTHER RESOLVED: THAT upon adoption of this Resolution, copies hereof shall be furnished by the Chief Clerk of the House of Representatives to the Director of the State Health Department, the Chairman of the State Health Board, the Chief Fiscal Officer of the State, and to the Governor of the State of Arkansas.

**Committee on Aging**  
**Chalmers S. Pool, M.D., Chairman**

The Committee on Aging of the Arkansas Medical Society met at the Sheraton Inn in Fort Smith, Arkansas, at 9:00 a.m. on November 16, 1980. Members present were Dr. Chalmers Pool, Chairman; Dr. John Guenther and Dr. Charles Bailey.

The Committee voted to endorse and support the Hospice concept of care for the chronically ill.

There was considerable discussion of State supported satellite clinics. It was felt that in many instances these clinics were operated by ancillary personnel without properly trained medical supervision. It was the feeling of the committee that this condition should not exist.

**Sub-Committee on**  
**Liaison with Vocational Rehabilitation**  
**John P. Wood, M.D., Chairman**

**1980 Summary**  
**Rehabilitation Agency Activities**  
**In Field of Medical Services**

The correction of orthopedic impairments continues to lead the way in physical restoration services provided through the Arkansas Rehabilitation Program.

This fact is one of several contained in the annual report of the Department of Human Services, Division of Rehabilitation Services. The report covers the Federal fiscal year, from October 1, 1979 to September 30, 1980.

Other parts of the report show an increase in applications for end stage renal disease services, and a greater number of gastric by-pass surgeries.

The latter procedure is a relatively new one from a rehabilitation standpoint and probably should be the subject of a research study to determine its effectiveness in that connection.

The number of orthopedic cases was 842, or approximately 18 percent of the 4,497 persons rehabilitated during the year. The services the orthopedic group received included diagnosis, 91.2 percent, and physical restoration, 99.3 percent.

The year included 387 approved cases of irreversible kidney disease and the entire amount of the Arkansas Kidney Disease Commission's State appropriation was expended for services before the end of the year. Members of the medical profession continued to provide needed services even though the appropriated funds had been exhausted.

An encouraging sign for the kidney disease patient is the increasing use of peritoneal dialysis in some cases. Peritoneal dialysis, as opposed to hemo-dialysis, allows the patient to pursue his vocation, or in the case of a woman, her vocation or housework, while undergoing treatment. The process has positive aspects for the rehabilitation program, too, because it is less expensive in the long run. And, as stated earlier, it enables the patient to devote more time to employment, which is at the heart of rehabilitation.

Another procedure that received considerable attention during the fiscal year was gastric bypass surgery. Services for 68 patients were provided during the year by the Rehabilitation Services.

Young M. Orsburn, the Division's Program Administrator for Physical Restoration Services, advocates a continuing review of the cases as to the individual's weight reduction, employment, and other pertinent data. Results of the study would help determine future justification of rehabilitation funding for the surgical procedure.

Thirty-two cases diagnosed as in need of open heart surgery or other major cardiovascular procedures were reviewed during the year by the Division's Cardiovascular Committee. Members of the committee are appointed in cooperation with the Medical Society and of the cases they reviewed, most received services from the Rehabilitation Services.

Other physically disabled persons receiving

diagnostic and physical restoration services included the following:

<i>Disability Group</i>	<i>No. Served</i>
Blind and visually impaired	274
Hearing impaired	213
Amputations	124
Neoplasms	85
Allergic and endocrine disorders	101
Blood diseases	12
Heart and circulatory conditions	132
Respiratory diseases	29
Digestive system disorders	265
Genito-urinary system disorders	423

The remainder of the 4,497 rehabilitated cases included those with mental condition — 1,659; other nervous disorder — 105; other disabling conditions not elsewhere classified — 228; and speech defects — 15.

#### Rehabilitation Services

##### Grateful to Medical Society

Throughout its 50-year history, the Arkansas Rehabilitation Program has been a partnership with other professional groups, especially the Arkansas Medical Society.

And, as a new year begins, E. Russell Baxter, Commissioner of the Rehabilitation Services Division, felt it appropriate to express the Division's appreciation to the Society and its members.

He said:

"Members of the Arkansas Medical Society constitute one of our principal referral sources and they are of tremendous assistance in helping us assess the rehabilitation potential of applicants for services.

"Members of the Society's Rehabilitation Advisory Committee provide us with a valuable link to the medical profession in matters of new treatment and restorative techniques and procedures, professional fees, and advice on making our State's rehabilitation program more effective.

"And finally, Society members contribute mightily to our efforts to restore disabled people to a productive place in society.

"We pledge ourselves to the continuance of this close relationship with the Society and its members. And, in areas where strengthening may be needed, we will work toward that goal."

#### Committee on Continuing Medical Education

##### John M. Hestir, M.D., Chairman

The Committee on Continuing Medical Education has continued to function and has as one



of its main responsibilities the surveying for accreditation various organizations and institutions.

The following organizations have been accredited to offer continuing medical education programs with Category I credit: the Arkansas Academy of Ophthalmology; St. Joseph's Mercy Medical Center, Hot Springs; Baptist Medical Center, Little Rock; Arkansas Medical Society Committee on Scientific Programs; Memorial Hospital, North Little Rock; St. Vincent Infirmary, Little Rock; and Veterans Administration Hospital, Fayetteville. Several of these institutions have been resurveyed this year and, at the present time, all accredited organizations hold full, four-year accreditation.

As of the first of this year, the accreditation of continuing medical education will be reunified under one organization. This organization, the Accreditation Council for Continuing Medical Education (ACCME), will be responsible for establishing requirements for accreditation. At this time, there have been no changes in the accreditation process; however, it is anticipated that within the next few months new requirements for accreditation will be established.

The Arkansas Medical Society, along with the other state medical associations, will still have the responsibility for performing surveys and making decisions on which intra-state institutions/organizations will be accredited. The University of Arkansas, as well as all other medical schools and some organizations that are national in scope, are accredited for their continuing medical education programs directly by the national organization.

The accreditation program in Arkansas has resulted in thousands of hours of continuing medical education credit being offered to the physicians of Arkansas at very little or no cost.

The entire Society should express its appreciation to the physicians who serve on the Continuing Medical Education Committee and give of their time to perform the accreditation surveys.

#### **Committee on Public Relations**

**Milton D. Deneke, M.D., Chairman**

The Public Relations Committee met in November in connection with the winter meeting in Fort Smith.

The committee discussed, in general, the purpose of the Public Relations Committee and agreed that the scope of the committee is such

that the committee will, in all probability, become one of the more important committees of the Society in the future.

The committee discussed means at their disposal on how to enhance the work of this committee. It is felt that the committee needs professional public relations advice and will, in the future, need someone in the Fort Smith office to devote considerable time to the activities of this committee.

Specifically, the committee made the following decisions:

1. To contact PR firms in the State and determine the cost of securing on-going advice and guidance for the committee.
2. Encourage the executives of the Society to designate, in the future, someone in the Fort Smith office to budget adequate time to work directly with the committee. This may require the hiring of an additional employee.
3. To pursue in the future the presentation of a pilot video-cassette health education film series to test the public reaction to such an endeavor.
4. Continue to work with the radio-tape program.
5. Study methods of expanding the work of the Society Speakers Bureau.
6. Plan to meet again on a Saturday afternoon in Little Rock sometime prior to the annual meeting of the Society.

*Proposed:* Committee members need to adopt a concise and meaningful goal!

*Goal of the Public Relations Committee:* To influence public opinion through actions and media communication so as to improve the image of the medical profession.

#### **Sub-Committee on**

#### **Liaison with the Auxiliary**

**Warren C. Boop, Jr., M.D., Chairman**

The Sub-Committee on Liaison with the Auxiliary has had no formal meetings during this year, but its members have met frequently with members of the Auxiliary.

The Committee advised the Auxiliary in September on the best and safest short-term investment of Auxiliary funds.

The Auxiliary was advised to seek clarification of its tax-exempt status since the Auxiliary is receiving increased donations to the three student loan funds.

The Auxiliary obtained authorization from the

Society's Executive Committee to obtain legal advice from its lawyers on this matter.

#### **Committee on Medicine and Religion**

**Fred O. Henker, M.D., Chairman**

A symposium on Medicine and Religion was organized and conducted on December 6 at the University of Arkansas for Medical Sciences auditorium. This meeting featured Joseph V. Fisher, M.D., and Kenneth Pepper, Ph.D., and attracted eighty participants from all over the State.

The long-term project of securing a chaplain for University Hospital moved forward to naming of a search committee with one of the committee as a member. Unfortunately, the project was again set aside due to the Governor's instructions concerning financial curtailment.

A task force on Human Values in Medicine for the University of Arkansas College of Medicine was named by Dean Bruce, including a member from this committee. This group is working toward incorporation of human values in all levels of medical education.

Plans are underway for a Prayer Breakfast at the annual Society meeting, April 28, featuring Dr. Joe Norton.

The committee would like to conduct another Medicine-Religion Symposium in 1981, possibly Saturday, October 10.

#### **Committee on Arrangements**

##### **For Annual Session**

**Frank E. Morgan, M.D., Chairman**

The Annual Session Committee has met on several occasions by mail, telephone, and at the Winter Meeting held in Fort Smith. President Kutait and the councilors of the Fourth District, host district for the convention, were also in attendance at the Winter Meeting. Dr. Morgan announced that J. Larry Lawson, M.D., would serve as Chairman of the Scientific Exhibits and that Dr. Morgan would serve as Chairman of the Memorial Service.

The speakers for the Scientific Sessions as proposed by the various specialty sections were approved and invitations extended to each one. The chairman was granted permission to arrange the order of the Scientific Sessions. The Committee also approved several changes in the evening events as proposed by the chairman. The chairman was to seek approval of the president-elect and the Council at their next meeting, which

was done. These events include changing the Blue Cross-Blue Shield party to Sunday night, an informal buffet meal, program, and dance on Monday evening, and a theater type inauguration of the President of the Society followed by the Council reception on Tuesday evening.

The Committee asks for the approval, cooperation, and participation of the members of the Society at these functions.

#### **Constitutional Revision Committee**

**A. S. Koenig, Jr., M.D., Chairman**

At the Annual Session of the Arkansas Medical Society in 1980, the House of Delegates adopted the recommendation of Reference Committee 2 to be submitted to the Committee on Constitutional Revision for study and recommendation to the House of Delegates. It stated:

1. That the mid-winter meeting be held for two days with the House of Delegates meeting each day.
2. That reference committees meet after the first session of the first day.
3. That a scientific session be held on the afternoon of the first day.
4. That the budget of the Medical Society for the coming year be presented at the mid-winter meeting.
5. That the location of the winter meeting be changed from year to year.

At the meeting of the Council of the Arkansas Medical Society on June 29, 1980, the Council voted to request the Constitutional Revision Committee to draft amendments to the Constitution and Bylaws to alter the election process so that the councilor districts would actually hold elections prior to the annual session of the Medical Society and would elect an individual to fill the councilor vacancy that would occur at the time of the annual session.

The Constitutional Revision Committee met at the mid-winter meeting of the Society in Fort Smith in November 1980. Dr. Nathan Poff was not present. The members present were Dr. J. Warren Murry and Dr. Koenig, the chairman. It was felt by the committee that the request of the House concerning the mid-winter meeting posed some questions which would be difficult to resolve and should, therefore, be addressed prior to offering any response to the House. Therefore, there are no recommendations at this time on



Items 1, 2, and 3 of the House of Delegates proposal.

Item 4 of the House proposal, which requested the budget to be presented at the time of the winter meeting, also creates some problems. The Budget Committee is a standing committee of the Council with staggered membership terms and as a Council committee it reports to the Council. Article VI of the Constitution specifies that the Council shall constitute the finance committee of the House of Delegates. In the past, it has been customary to publish the budget figures in the convention issue of the Journal in March, complying with the intent of Chapter IV on House business. The central office informs us that the time factor would make it almost impossible to prepare a budget for the ensuing year and have it published in the Journal prior to the winter meeting. For instance, this year the 1981 budget was based on actual expense and income for the first nine months of the year and the budget committee's proposal was considered by the Council at the winter meeting. If there were to be any modifications to be made in the material, it would not have been possible to prepare revised figures for distribution to the House of Delegates one and one-half hours later. It is, therefore, the recommendation of the committee that this practice be continued with the presentation of a tentative budget to the Council at the time of the mid-winter meeting. The Council can then alter or modify the budget so that it can be prepared and presented in its final form by publication in the March issue of the Journal of the Arkansas Medical Society prior to the Annual Session. No constitutional or bylaws revision is necessary to achieve this.

In Item 5, it is recommended that the location of the mid-winter meeting be changed from year to year. The Council has the authority to set the location of both the winter meeting and the annual session of the Arkansas Medical Society and no alteration in the bylaws is necessary to achieve this. It should be considered as an item of business for the Council to set the time and place of the mid-winter meeting at the appropriate time.

The problem presented with the election of councilors is more difficult to solve. In the first place, there are some councilor districts in the State which are constituted as societies with elected officers, but there are other councilor districts which are merely geographical entities

and are not on an organized basis. The only component societies which are recognized by the Arkansas Medical Society are those of the county societies which are chartered by the state body. There is nothing in the bylaws establishing councilor districts as political entities or component societies of the Arkansas Medical Society. Councilors, as officers of the Arkansas Medical Society, therefore, should be only elected by either the House of Delegates, as at the present time, or possibly by the membership. At present, all officers of the Arkansas Medical Society, including the councilors, are elected by the House of Delegates. The Constitutional Revision Committee, after long and careful thought, feels that the recommendation of the Council can best be achieved by having councilors elected by members of the Arkansas Medical Society residing in each councilor district. We also feel that the membership should have more of an opportunity to voice their selections for president-elect, vice presidents, secretary, and treasurer. To this end, the following revisions to the Constitution and Bylaws are submitted at this time:

BYLAWS, CHAPTER V, Election of Officers.

Delete: Present Sections 1, 2, 3, 4, 5, 6, 7.

Substitute the following new copy:

#### Section 1. Nominating Committee

##### (A) Selection of Committee

Prior to adjournment of the first meeting of the House of Delegates at each Annual Session, the delegates from the component societies of each councilor district shall meet, the councilor not subject to re-election acting as chairman, and select one delegate from each district to form a committee on nominations. It shall meet and organize by selecting a chairman and a secretary.

##### (B) Duty of Committee

It shall be the duty of this committee to consult with members of the Society and to hold one or more meetings at which time the best interest of the Society and of the profession of the State for the ensuing year shall be carefully considered. The committee shall submit a ticket containing the names of two or more members for the office of president-elect and of one member for each of the other positions to be filled for the ensuing year, except offices of Speaker and Vice Speaker of the House of Delegates. No two candidates for president-elect shall be named from the same county. The committee shall submit its slate of

nominations to the headquarters office by November 1 for distribution to county societies.

The Nominating Committee shall serve as tellers for election of officers.

#### Section 2. Other Methods of Nomination

Nominations may be added to the slate proposed by the nominating committee by the following methods:

- (A) for the position of president-elect: by petition of three county medical societies;
- (B) for secretary, treasurer, first vice president, second vice president, third vice president: on petition of two county medical societies;
- (C) for the position of councilor: by a component society in the councilor district;
- (D) for delegate and alternate delegate to the American Medical Association: by petition of five councilors.

All nominations submitted in accordance with provisions of this section shall be submitted to the headquarters office prior to February 1 and shall be accompanied by the nominee's curriculum vitae.

#### Section 3. Election

Election shall be by written mail ballot of the membership, with the following provisions and exceptions:

- (A) The president-elect, first vice president, second vice president, third vice president, secretary, treasurer, delegate to the American Medical Association and alternate delegate to the American Medical Association shall be elected by a majority vote of all eligible voting members. An active member of the Society shall be entitled to vote if payment of dues for the active member for the current year is received in the headquarters office prior to March 1; all life members are eligible to vote.
- (B) District councilors shall be elected by majority vote of eligible voting members of the State Society in the district where the vacancy exists. An active member of the Society in the district shall be eligible to vote provided the active member's dues payment for the current year is received in the headquarters office prior to March 1; all life members are eligible to vote.
- (C) The speaker and vice speaker of the House of Delegates shall be elected by majority vote of the members of the House. The

House of Delegates shall establish its own rules for election of its officers.

- (D) Ballots shall be distributed to the membership by the headquarters office by February 15. The ballot shall indicate the origin of each nomination and shall be accompanied by the curriculum vitae of each candidate as approved by the candidate. Marked ballots shall be returned to the headquarters office in sealed envelopes with name, town, and councilor district of the voter recorded on the outside of the envelope. Eligibility of voters will be certified by the headquarters office and ballot transmitted to the Nominating Committee for tabulation.
- (E) The Nominating Committee, acting as tellers, shall report to the House of Delegates on the last day of the annual session on the outcome of the balloting. The report shall be the first order of business for that session of the House.
- (F) The election of the speaker and vice speaker shall be the second order of business of the House of Delegates on the last day of the annual session. Election shall be by majority vote.

#### Section 4. Run-Off Elections

In the event no candidate for a position achieves a majority by mail ballot, or the nominating committee is otherwise unable to declare a position filled by mail ballot, the House of Delegates shall elect by secret ballot from that number of candidates, in decreasing order of plurality, which exceeds by one the position to be filled.

#### Section 5. Terms of Office

Councilors shall be elected to serve a two-year term; all other terms of office are for one year. All officers shall serve until their successors are installed.

Subsequent sections of this Chapter (8 through 12) would be retained as is and re-numbered.

The Committee calls attention to the fact that these proposed changes would eliminate the prohibition on soliciting votes for office and the requirement that a member be in attendance at the meeting at which the member is elected to office. While attendance at the meeting at which a candidate is elected to office would no longer be required, all candidates who are being considered for office should feel an obligation to be



present at the annual meeting at which the election is held.

During the 1980 mid-winter meeting, the Council referred to the Committee on Constitutional Revision three recommendations:

1. The immediate past president of the Society be made a voting member of the Executive Committee of the Council.
2. Delegates be elected by the county society to serve for the calendar year, based on the State Society membership of the component society at the end of the prior year.
3. A recommendation that the nominating committee be selected by councilor district caucus on the first day of the annual meeting, with the committee to make its nominations for the next year by February 1. The recommendation was for the election process to otherwise be carried out as present.

The committee considered these recommendations. The committee does not feel that the immediate past president should be included on the Executive Committee of the Society. The committee makes an alternate recommendation that the Speaker of the House of Delegates be a voting member of the Council and a member of the Executive Committee. We have drafted proposed amendments to accomplish this, as well as to implement the recommendation regarding delegate representation. The committee's recommendation regarding the election process proposes more extensive revision than was suggested by the Council:

Proposed amendments:

#### ARTICLE VI. Council

##### Section 2. Composition

The Council shall consist of the councilors, the president, first vice president, president-elect, secretary, treasurer, immediate past president, and Speaker of the House of Delegates. The vice speaker of the House of Delegates and the past presidents shall be members ex-officio without vote, except that the immediate past president shall have a vote. (Remaining portion of this section would not be affected by this proposal.)

##### Section 3. Executive Committee

The Chairman of the Council, the president, the president-elect, the secretary and the Speaker of the House of Delegates shall constitute the Executive Committee of the Council. The Chair-

man of the Council shall serve as chairman of the Executive Committee. The Executive Committee shall have such powers as may be defined from time to time by resolution of the Council.

#### CHAPTER IV. House of Delegates

##### Section 6. Representation of Component Societies

###### (A) Regular county societies

- (1) Each regular county society shall be entitled to send to the House of Delegates each year one delegate for every twenty-five *voting members of the* Arkansas Medical Society, or major fraction thereof, *on the roll of the county society at the end of the previous calendar year.* The county society shall be entitled to such representation in the House of Delegates only if its annual report and assessment are in the hands of the executive vice president by March 1 of each year. Each society which has complied with the provisions of this section shall be entitled to one delegate regardless of its number of members.

The Committee proposes the following amendments in the Constitution to provide a special membership classification and to clarify the composition of Council committees.

#### CHAPTER I. BYLAWS

Add new section as "F" and re-number subsequent sub-sections ("F" through "H").

###### (F) Active Direct

An active member in good standing in his component society who leaves the jurisdiction of that society for temporary residence outside the continental United States may maintain direct active membership in the State Society if the foreign location makes the individual ineligible for membership in the component society.

#### CHAPTER VII. BYLAWS. COUNCIL

##### Section 7. Committees

Add to sub-section (3) so that it will read:

- (3) ad hoc committees as may be warranted for specific purposes; with the chairman having authority to appoint members of the Society who are not Council members to such ad hoc committees of the Council.

### **Ad Hoc Committee on Position Papers**

**Purcell Smith, Jr., M.D.**

**James M. Kolb, Jr., M.D.**

**Co-Chairmen**

Dr. Kemal Kutait, in his inaugural address, indicated that one of his projects would be to develop written "Position Papers" on various issues that relate to the Arkansas Medical Society. That Committee has met on several occasions, most recently February 1, 1981, and has considered approximately twelve issues at this point. A total of thirty-five issues have come to the attention of the Committee at this time, and it is anticipated that others will arise later.

The Committee has divided into three subcommittees, and anticipates continuing to function in this manner.

Position Papers on five issues have been put into final form and will be considered by reference committees at the Annual Session in April, 1981. The Committee proposes the following Position Papers on (1) continuing medical education, (2) highway safety, (3) the impaired physician, (4) alcohol and drug abuse, and (5) physician extenders.

### **CONTINUING MEDICAL EDUCATION**

#### *General Information*

Continuing medical education is composed of any education or training which serves to maintain and develop or increase the knowledge, interpretive and reasoning proficiencies, applicable technical skills, professional performance standards, or ability for interpersonal relationships that a physician uses to provide the service needed by patients or the public.

The Arkansas Medical Society's commitment to continuing medical education dates back to its founding in 1875. One of the Society's primary purposes is continuing education of physicians. The Society arranges for continuing education for physicians by sponsoring programs and is responsible for accreditation of non-medical school affiliated hospitals and institutions across the State that offer quality educational programs for physicians.

The University of Arkansas College of Medicine offers numerous continuing medical education programs of excellent quality at its Little Rock campus, at the Area Health Education Centers across the State, and at other locations throughout the State.

During the early and middle 1970's, there was a great deal of interest on the part of the medical community in mandating continuing medical education for physicians. At that time, it was believed that mandatory continuing medical education would improve the quality and accessibility of care as well as reduce the incidence of malpractice suits. Many studies since that time have indicated that mandatory continuing medical education requirements have not fulfilled those expectations.

#### *Applicable Laws and Regulations*

The 1977 session of the Arkansas General Assembly addressed mandatory continuing medical education by passing Act 767, with the full support of the Arkansas Medical Society. This law permitted the Arkansas State Medical Board to establish continuing medical education requirements for relicensure in a manner and at the time the Board felt necessary for the good of the people of Arkansas.

#### *Arkansas Medical Society Position*

The Arkansas Medical Society House of Delegates, composed of representatives from each county medical society, addressed the issue of compulsory continuing medical education as a requirement for membership at its 1978 Annual Session. The House of Delegates at that time voiced its support for continuing medical education and encouraged all physicians to avail themselves of educational opportunities. Thus, the position of the Arkansas Medical Society is that it is not in the best interest of the profession or the public to mandate such requirements.

The Arkansas Medical Society strongly supports the American Medical Association Principles of Medical Ethics, Section V., which states "A physician shall continue to study, apply and advance scientific knowledge; make relevant information available to patients, colleagues, and the public; obtain consultation, and use the talents of other health professionals when indicated."

The Arkansas Medical Society supports those nationally recognized specialty groups which require continuing medical education in specific fields as part of their voluntary board certification requirements.

### **HIGHWAY SAFETY**

#### *General Information*

Safety on the highway is a matter of concern to every Arkansas resident. During the decade of



the seventies, 6,037 Arkansas residents were killed in automobile accidents. During 1978 alone, the estimated cost to society for automobile accidents was almost 300 million dollars in Arkansas. The important thing to recognize is that a significant number of deaths and serious injuries could have been prevented by obeying the speed laws, avoiding drinking while driving, and using seat belts.

Speed is the number one cause of fatal accidents in Arkansas. During the last few years, approximately forty percent of all fatal automobile accidents and injuries involved excessive speed. Arkansas has consistently had from twenty to twenty-two percent of its motor vehicle deaths attributable to alcohol. Seat belt usage appears to be on a downward course. Five years ago, nearly six percent of Arkansas travelers were wearing seat belts at the time of their fatal injury or crash. In 1979, less than four percent were wearing them. Over the last five years, 57 times more people have died not wearing their seat belts than those who did buckle up. Seat belts do protect from injury and death — when used. Since 1972, 104 children aged 0 to 4 have become fatality statistics in Arkansas and 6,534 children were injured. According to an eight-year study in the State of Washington, if all the children in this age group had been adequately restrained at the time of their accidents, the fatality rate would have been reduced by ninety percent and injuries by two-thirds.

Arkansas has legislation which requires all motorcycle riders to wear a safety helmet. A few states have repealed this law, resulting in as much as a 100 percent increase in serious head injuries to motorcycle riders. Attempts were made in the 1979 session of the Arkansas General Assembly to repeal Arkansas' law; however, these efforts failed.

#### *Arkansas Medical Society Position*

The Arkansas Medical Society strongly endorses reasonable speed limits, including the 55 mile highway speed limit, and enforcement of those laws pertaining to drinking and driving.

The Arkansas Medical Society strongly supports the law requiring helmets by all motorcyclists using Arkansas roads and off-road racing. A similar law should be in effect for moped riders.

The Arkansas Medical Society urges the education of our school children regarding the problems of driving while drinking, obeying the speed

limits, and the use of appropriate safety restraints.

The Society urges Arkansas physicians to actively support and participate in efforts to educate our citizens regarding highway safety and accident prevention.

### THE IMPAIRED PHYSICIAN

#### *General Information*

The impaired physician is one who is no longer able to effectively practice medicine because of the development of a physical, mental, or emotional problem. This includes the development of a dependency on alcohol and/or other chemical substances as the cause of the impairment.

The development of an impairment in a physician adversely affects the individual, his or her patients, the family, and the entire community. With the shortage of physicians in Arkansas, particularly in the rural areas, the problem can be very serious to the area served by the physician.

Studies of the problem indicate that, percentage-wise, the problem is no more severe than in the general population. The medical profession is concerned with the recognition and treatment of all impaired individuals. The impaired physician, however, presents a unique challenge due to the nature and responsibility of his or her work. The investment in the physician's education and training and the need for his or her services, particularly in the rural areas, makes it imperative that there be rapid recognition and effective treatment before returning to work.

Emotional strain, in addition to many other factors, are responsible for the development of mental and emotional impairments in individuals. At this time, recognition and treatment can be very effective in relieving an individual of his or her problem and helping that individual return to effective life.

#### *Applicable Laws and Regulations*

The Arkansas State Medical Board has the authority to regulate the practice of medicine in Arkansas and with this responsibility it takes action in regard to the individual who can no longer effectively practice medicine. The Board has the authority to investigate, charge, and hold hearings to determine the problem that exists. The Board can issue a warning, suspend or revoke a license. The Board has functioned well in its responsibility and has helped many physicians to recover and return to effective practice. The Board works closely with the appropriate Federal

agencies in regard to any laws or regulations pertaining to this problem.

#### *Arkansas Medical Society Position*

The Arkansas Medical Society recognizes that the public has the right to know of this problem and its efforts to correct it. In general, the public recognizes that physicians work under stress and pressure and are subjected to the same stresses as the general public. The Arkansas Medical Society working with the public, as it has in the past, can reduce some of these stresses by education as to health needs and health habits.

The Arkansas Medical Society and the American Medical Association are working intensively to recognize and treat the impaired physician. The success rate in returning physicians to active effective service is excellent.

The Arkansas Medical Society is desirous that the public be aware of its concern over the problem and its intent to do everything possible to protect the public's access to quality medical care. The public develops a rapport with its physicians and becomes concerned when it recognizes a physician has a problem. The Arkansas Medical Society assures the public it will do everything possible to restore that physician back to active effective practice.

The Arkansas Medical Society also recognizes the concern of the physician and his or her family as to his or her own health and desire to practice quality medicine. The Arkansas Medical Society will do everything it can to help a physician recover from an impairment and return to practice.

#### *References*

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- Robertson, Janice J.: *Proceedings of the Third AMA Conference on the Impaired Physician,* September 29-October 1, 1978.
- Huginin, Mary B.: *Proceedings of the AMA Conference on "The Impaired Physician: Answering the Challenge,"* February 4-6, 1977.

### ALCOHOL AND DRUG ABUSE

#### *General Information*

Drug abuse is the use of any drug that adversely affects or limits one's ability to function as a responsible person. Such drugs produce mood or

mind alterations; that is, they are psychoactive. The Arkansas Medical Society has listed the drugs of abuse in the order of their physical, psychological and socioeconomic danger. Alcohol is the most destructive drug subject to abuse. Following it in decreasing order are: barbiturates, amphetamines, heroin and other narcotics, cocaine, hallucinogens, marijuana and hashish, and solvents.

Alcohol abuse is considered the most serious form of drug abuse in our society when evaluated in terms of organ damage, effect on the user's health, societal disruption, association with criminal behavior and total population involved. Barbiturates and amphetamines (central nervous system depressants and stimulants) are increasingly abused beyond the intended scope of their use and in quantities greater than consistent with the immediate medical indication.

Addiction to heroin, opiates and other narcotics is a disease which requires medical services and social rehabilitation. The medical aspects of the disease should be separated from the criminal and legal status of the individual, so that treatment may be available to every addict who seeks it. Cocaine is used illicitly as a central nervous system stimulant. Continued use leads to deterioration of health because of nervous fatigue, nutritional deficiency and psychosocial defects. The long term effects of hallucinogens or psychedelics are not well understood and may be potentially harmful. The long range effects of marijuana also are not well known and there may be some medical usefulness for this drug. Inhaling the fumes of solvents can cause mild intoxication, acute disorientation or death. Repeated use may cause psychosocial problems.

Drug abuse is not a single, simple issue. It is a collection of many complex, interrelated psychological, physical and social problems not isolated from the other problems of our communities, such as unemployment, housing, education, and police relations. Since many aspects of these problems are unique to each locality, local action and involvement are necessary to confront them.

The Arkansas Medical Society advises and urges physicians to acquaint themselves with the various programs available for the medical treatment of alcohol and drug abuse and, where appropriate, to refer their patients to them promptly.



### *Applicable Laws and Regulations*

There are a variety of laws and regulations pertaining to drugs, including alcohol and tobacco. These laws and regulations are developed by the federal and state governments, state and federal agencies, and regulatory boards.

The Arkansas State Medical Board is the regulatory authority for physicians who prescribe legal medications. Investigation of over-prescribing of legitimate drugs is the responsibility of the State Medical Board, the State Health Department, and the Arkansas State Board of Pharmacy.

The illegal obtaining of legitimate drugs or illegal drugs is the responsibility of the courts and the various policing agencies.

The Arkansas State Medical Board developed a regulation in 1979 forbidding physicians in the State to prescribe amphetamine or amphetamine type drugs for any use other than narcolepsy, or hyperkinesis in children.

### *Arkansas Medical Society Position*

The Arkansas Medical Society does not recommend prohibition of alcoholic beverages; it advocates intensive public education, in all grade levels and through the mass media, concerning the harmful effects of alcohol and asks the mass media not to present alcohol in such a way that promotes its use as a mood-altering drug. The Arkansas Medical Society also believes that alcoholism must be recognized and treated as a disease that has become a public health concern of major proportions and that insurance coverage should not exclude the treatment of alcoholism or place restrictions on the coverage provided, except as those restrictions may apply to any other medical illness.

The Arkansas Medical Society recommends that physicians prescribe barbiturates and other sedative hypnotics for relief of severe symptoms, but avoid them for minor complaints of distress or discomfort; attempt to diagnose and treat underlying disorders before relying on drugs of this class for symptomatic relief; and assess susceptibility of the patient to drug abuse before prescribing barbiturates or any other psychoactive drugs. Benefits should be weighed against hazards.

The Arkansas Medical Society encourages the availability of detoxification clinics and halfway

houses in treating the addiction to heroin, opiates and other narcotics. In these individuals, attention should also be given to resocialization in an attempt to replace the psychological dependence and establish the individual's personal stability.

The Arkansas Medical Society encourages carefully designed animal and human research concentrated on the two most promising medical applications of marijuana — nausea and glaucoma. It must be remembered that marijuana is potentially damaging to health in a variety of ways, but it can be especially harmful when used by a person who is immature, unstable or already ill. The Arkansas Medical Society emphasizes that reducing the legal penalties for simple possession of marijuana can in no way reduce the health hazards attendant on its use.

The Arkansas Medical Society feels strongly that when a person shows medical indications of physical or psychological dependence on any drug, that person should receive competent medical care. The Arkansas Medical Society urges the establishment of training programs in medical schools, in community hospitals, and at post-graduate levels with extension of training to nurses and paramedical personnel dealing with drug abuse.

## PHYSICIAN EXTENDERS

### *General Information*

The term, physician extenders, may, in a broad sense, describe anyone employed in the health care field who assists the physician or extends his or her capability in delivering medical care. In a more specific sense, the term physician extender is most often utilized to describe individuals who hold credentials such as the Physician's Trained Assistant or the Registered Nurse Practitioner. Normally, they are required to work under the direct supervision of a practicing physician under specific guidelines and protocols delineating the scope of their functions.

The educational requirements necessary for credentialing the physician extenders are not uniform nationwide. The nurse practitioner is a registered nurse with either a diploma, associate degree, or baccalaureate degree, who has received from a few months to two years of additional training beyond the basic nursing education. The nine months training of a registered nurse to qualify for becoming a registered nurse prac-

itioner is normally divided into three months of academic work with six months preceptorship served with a practicing physician in his office setting in Arkansas. Nurse practitioners who hold a baccalaureate degree can earn a master's degree with an additional one year's training.

The educational programs for physician's assistant are fairly uniform. Most of these programs are University administered and grant a B.S. degree after four years or more. The last two educational years are clinical training through preceptorships. Arkansas does not have a physician's assistant training program at this time.

#### *Applicable Laws and Regulations*

The credentialling of physician assistants is governed by the passage of Act 459 of 1977, which decreed the certification of Physician's Trained Assistants and empowered the Arkansas State Medical Board to establish qualifications and to delineate by regulations the scope of the practice of the Physician's Trained Assistants. In general, the act requires that Physician's Trained Assistants work under the supervision and direction of a licensed physician who is responsible for their performance.

Regulations developed by the Arkansas State Medical Board require that Physician's Trained Assistants must pass an examination prepared by the National Board of Medical Examiners and certified by the National Commission on Certification of Physician's Assistants. The regulation further requires that any physician utilizing the services of a P.T.A. must receive permission to do so from the State Medical Board. At that time, the responsible physician must supply the State Medical Board with information pertaining to the scope of the P.T.A.'s function. The supervising physician is required to sign all prescriptions.

The credentialling of Registered Nurse Practitioners was authorized by the passage of Act 613 of 1979 and empowered the State Board of Nursing to develop regulations pertaining to the educational requirements and scope of practice. These regulations require that the Registered Nurse Practitioner must function under the direction of a licensed physician. Nurse Practitioners are not allowed to sign prescriptions. Regulations pertaining to education include a minimal requirement of a two-year nursing program plus additional nine months training.

#### *Arkansas Medical Society Position*

The efforts of the Arkansas Medical Society are directed towards the end that the people of Arkansas receive excellence in health care. This excellence can best be accomplished by supplying continuous comprehensive care to all citizens by competently trained physicians. Because of the present physician maldistribution, adequately trained physician extenders may be necessary in some situations to assist in overcoming deficits in health care delivery in Arkansas.

The Arkansas Medical Society believes that the training programs preparing physician extenders should be constantly monitored to assure the quality of training provided. Clinical training of primary care physician extenders must be under the direct supervision of a practicing primary care physician in a program approved by the Arkansas State Medical Board.

The Arkansas Medical Society believes that the physician extenders should be certified by the Arkansas State Medical Board because these individuals functioning in this expanded role under the supervision of a practicing physician are indeed practicing medicine as defined by the Medical Practice Act.

The Arkansas Medical Society believes that the physician extender should function as part of a health care team headed by a practicing licensed physician. The physician extender should not function as an independent health practitioner but should be employed as a means of providing care under specific guidelines and protocols under the direction and responsible supervision of the practicing physician.

The supervising physician should maintain responsibility for the quality of care provided by the physician extender. Since certain aspects of medical care are delegated to physician extenders, it is of paramount importance that there be a close working relationship between the physician extender and the supervising physician.

The Arkansas Medical Society believes that the most effective method to insure quality medical care utilizing physician extenders is that which involves on-sight supervision by a practicing physician supervising no more than two physician extenders at one time. This close working relationship assures the pursuit of excellence and the delivery of high quality care to the people. The breadth and depth of the physician's education



and experience is necessary to assure accurate diagnosis and to outline appropriate treatment programs.

The scope of function of physician extenders working in hospital settings should be specified by the granting of privileges normally utilized by the hospital medical staff. The employing practicing physician must be solely responsible for the physician extender in both hospital and office settings.

The Arkansas Medical Society believes that physician extenders can be a valuable member of the health care team, and can extend, to a degree, the effectiveness of a physician's services; however, the ultimate solution to providing availability of quality medical care to all citizens is the training and proper distribution of physicians.

**State and Eighth Councilor District  
Professional Relations Committee  
Richard M. Logue, M.D., Chairman**

There has been no activity of the Professional Relations Committee for the Eighth Councilor District in 1980. There is an on-going investigation by this Committee, and others, related to another district. This, so far, has not been resolved but will be carried to conclusion.

**Tenth Councilor District  
Professional Relations Committee  
Samuel E. Landrum, M.D., Chairman**

The Tenth Councilor District Professional Relations Committee has reviewed three complaints relating to care or fees by three different physicians since our last report. All complaints apparently were met to the satisfaction of those who inquired and no cause for action against any of the three physicians was found.

**Fifth Councilor District  
George Warren, M.D., Councilor**

The Fifth Councilor District of the Arkansas Medical Society held its annual meeting in El Dorado, Arkansas, Wednesday, January 21, 1981, at the El Dorado Golf and Country Club. The routine business session included a report from the councilors on the activity that has been going on in the Council meeting since the last State Society meeting the the Spring, 1980.

Among items reported were (1) the proposal of changes in the dues structure; (2) a report on the changes contemplated in the retirement program

and other proceedings which have occurred at the regular Council meetings.

A request for participation in the State Medical meeting in Little Rock, April 26, 27, 28, and 29, was issued to all those in attendance. George Warren was renominated by the Fifth Councilor District for presentation to the Nominations Committee at the State meeting for another two-year term subject to the action of the House of Delegates in April.

Our perennial secretary, Wayne Elliott, arranged a very good program for us and was re-elected to this position by acclamation. In anticipation of the effort to have the councilor districts secure a member for the Nominating Committee at their annual meeting, K. R. Duzan was elected to represent our district on the Nominations Committee in April. The time was set for the third Wednesday in January, 1982, for our next Fifth Councilor District meeting.

Speaker for the evening was R. R. Matthews, Department of Psychiatry, University of Arkansas for Medical Sciences in Little Rock, who delivered a talk on "Treatment of Sexual Dysfunction."

**Eighth Councilor District  
W. Ray Jouett, M.D., Councilor  
William N. Jones, M.D., Councilor**

Following are listed the activities of the Eighth Councilor District during the year 1980:

1. Held five meetings during the year.
2. Heard a presentation on a proposed HMO Feasibility Study by Central Arkansas Baptist Hospital.
3. Adopted a resolution to be presented to the Board of the State Mental Health Services urging the appointment of a Board Certified Psychiatrist to fill the vacancy as director of the institution.
4. Approved the financial underwriting of a one-time nursing scholarship by the Auxiliary to honor deceased President of the Pulaski County Medical Society, Dr. Julian Foster.
5. Encouraged members to attend a meeting on Mental Health of the Elderly sponsored by Senator David Pryor.
6. Adopted a memorial resolution honoring the late Mr. Eugene Warren.
7. Heard an address by the Secretary of the State Medical Board, Dr. Joe Verser.
8. Assisted financially in the local hospital council's publicity program to help attract mem-

bership of responsible consumer representatives in the Central Arkansas Health Systems Agency.

9. Contributed \$500 to the Aldersgate Medical Camp for children.

10. Heard periodic reports on the Health Department's program for hypertension screening.

11. Assisted the Auxiliary in the promotion of their charity fund-raising program in the form of a pre-football game "Warm Up Party."

12. Maintained active liaison with the Central Arkansas Health Systems Agency through the Society's two representatives.

13. Took action to seek physician representation on the newly formed Core Task Force For Prevention of Teen-Age Pregnancies.

14. Honored all new members and wives at a banquet.

15. Approved a proposal that the Little Rock City Board proceed to Phase II in a study having to do with the implementation of life support measures to be provided by ambulance companies.

16. Featured the Pulaski County Coroner at a meeting at which time the duties of the Coroner's Office were explained.

17. Maintained liaison with medically oriented organizations in the area.

#### **Ninth Councilor District**

**Morriss M. Henry, M.D., Councilor**

**Rhys Williams, M.D., Councilor**

A councilor district meeting was held on December 4, 1980, with physicians and spouses present.

The "Legislative Alert" newsletters from the Society headquarters were reviewed in detail and there was discussion of the impact of the various legislative proposals. Morriss Henry, a member of the State Senate, answered questions from members on legislation considered in the interim sessions of legislative committees.

Dr. Henry presented information to the district members on business items under consideration by the State Society. He discussed the study of Society reserves and the proposal for a reduction of State Society dues. The members in the district decided to take no action on the question until further information is received.

#### **Report of the Council**

**John P. Burge, M.D., Chairman**

The Council of the Arkansas Medical Society met on Sunday, June 29, 1980, at the Camelot Inn

in Little Rock and transacted the following business:

1. Morriss Henry presented suggestions from the Washington County Medical Society regarding changes in the Annual Session scheduling to increase interest and attendance. After discussion, the Council voted to change the meeting time for the Annual Session from Sunday through Wednesday to Thursday through Sunday as soon as feasible. The Council further voted to study changing of the meeting format with a report to be presented to the Council for approval. Chairman Burge appointed Dr. Jack Blackshear (Chairman), Dr. Larry Lawson, Dr. Neil Sims, Dr. Amail Chudy and Dr. Steve Wilson to this study committee.
2. The Council voted to establish the following policies regarding expense allowance for the president and president-elect of the Society and certain convention expense as follows:
  - (A) Complimentary tickets are to be furnished to all individuals seated on the dais at the convention inaugural banquet.
  - (B) Eight complimentary tickets for the inaugural banquet are to be made available to the incoming president for his guests attending his inaugural.
  - (C) The Society is to pay the hotel bill of both the president and president-elect at the annual meeting.
  - (D) Expenses be authorized for both the president and president-elect to attend the American Medical Association Leadership Conference each year.
  - (E) Expenses be authorized for both the president and president-elect to attend one of the two meetings of the American Medical Association House of Delegates each year.
  - (F) The Society will pay reasonable expenses of the president and president-elect in addition to the above-listed items. The Council voted to make the authorization for the expenses retroactive to the 1980 Annual Session. (Fiscal Note: It is estimated that items authorized above will increase the Society expense budget for approximately \$5,000 per year.)
3. The Council considered the vacancy on the



Medical Services Review Committee for the Radiology position and selected Donald C. Riley of Russellville to fill the vacancy.

4. The Council considered the mileage allowance paid to members of the Council and voted to keep the payment at 15¢ per mile.
5. James Kolb of the Committee on National Legislation and James Weber reported for Society representatives making a trip to Washington to visit with the Arkansas Congressional delegation.
6. President Kutait discussed the officer retreat proposed in his inaugural address and recommended that the Council endorse the concept and appoint a committee to work out details. The Council requested that the chairman appoint an ad hoc committee of the Council to study the feasibility of a weekend retreat for officers and report back to the Council.
7. The Council made appointments to the Board of Trustees of the Society Pension Plan as follows:  
 Dr. T. E. Townsend, appointed to fill the unexpired term of Mr. Schaefer (term expires April 1983)  
 Dr. George F. Wynne, appointed to succeed Dr. Ben Saltzman (term expires April 1984)
8. President Kutait reported for the Reorganizational Study Committee and submitted the following recommendation:  
 "That the Council favorably consider limitation of tenure of councilors to three two-year terms with two years off before being eligible for re-election. The committee further recommended that the mechanism for implementation be worked out by the Council and not referred back to the committee."  
 There was considerable discussion on limitation of tenure for councilors, with the majority against limitation. The Council then voted to request that the Constitutional Revision Committee draft amendments to the Constitution and Bylaws to provide that councilor districts would actually hold elections prior to the Annual Session of the Society to elect the councilor for the councilor vacancy occurring at that Annual Session.
9. Dr. Kutait requested an expression of opinion from the Council on limitation of tenure for Society officers, since that issue is being considered by the Reorganizational Study

Committee. The Council went on record as being generally opposed to limitation of tenure for its officers.

10. James Weber, Chairman of the Legislative Committee, reported to the Council that the State Medical Board had proposed regulations which would limit to two the number of registered nurse practitioners employed or supervised by a licensed physician. Upon motion of Kutait, the Council voted to write the State Legislative Council endorsing the concept of having only two nurse practitioners employed or supervised by a physician and providing a copy of an article from *Medical Economics* regarding a pediatrician's use of pediatric physician's assistants. The motion included directions to forward a copy of the letter to the Director of the State Health Department.

The Council met on Sunday, September 7, 1980, at the Camelot Inn in Little Rock and transacted the following business:

1. Minutes of the Executive Committee meetings held on July 11th and July 30th were presented for approval by the Council. The minutes of the July 11th meeting were as follows:  
 The Executive Committee was contacted concerning the changing of dates of the Annual Session from Sunday through Wednesday to Thursday through Sunday as instructed by the Council. Meeting dates were available in Hot Springs in 1982 and 1983 at the Arlington Hotel. The 1982 meeting could be scheduled April 29th through May 2nd and the 1983 meeting April 21st through the 24th. The Executive Committee approved having two consecutive meetings in Hot Springs as there were no available dates in Little Rock for the meeting to be held the latter part of the week.  
 The Council then approved the minutes of the Executive Committee for July 11th and July 30th as presented.
2. Chairman Burge then reported on actions of the Executive Committee taken August 27th, as follows:  
 (A) Approved Medical Society support of Amendment 59 to the State Constitution;  
 (B) Approved the request of the Arkansas Department of Human Services for en-

dorsement of its grant proposal for funding of a workshop and resource development for training of primary care providers in alcohol, drug and mental health programs;

- (C) Recommended that the Medical Society group plan with Blue Cross-Blue Shield not be expanded to include employees of physicians and their families because of problems encountered in implementation.

The actions were approved by the Council.

3. The Council voted to schedule the 1984 Annual Session for April 11-15 at the Camelot Inn and Convention Center in Little Rock.
4. The Council endorsed the proposed revision of the State Medical Board's "Regulation 10" pertaining to nurse practitioners.
5. Joe Verser, delegate to the American Medical Association, reported on the recent meeting of the AMA House of Delegates.
6. Carol Hogue of the University of Arkansas Medical Sciences Campus discussed the proposed Arkansas Reproductive Health Monitoring Program. The Council voted to go on record as supporting the proposal.
7. The Council heard Mr. Paul Schaefer discuss the Arkansas Medical Society Employees Pension Plan. Paul Cornell presented the following recommendations of the Ad Hoc Committee on Study of the Pension Plan:
  - (A) That the pension plan for Society employees be changed from a defined benefit plan to a defined contribution plan.
  - (B) That vesting remain the same as in the present plan.
  - (C) That the plan not include a provision for CPI adjustment.
  - (D) That the Society's contribution to the plan be computed on the basis of gross salary, excluding fringe benefits. Salary was defined as including bonuses.
  - (E) That the Society contribution be 8% of salary with a minimum 3% mandatory contribution by the employee.
  - (F) That special consideration be given to the situation of Miss Thompson, who would be penalized in her retirement because of the change to the defined contribution plan. (Note: Figures presented indicated only Miss Thompson and Dr.

Long would be adversely affected by change.)

Stanley Applegate presented recommendations from the Pension Plan Board of Trustees as follows:

- (A) If the Council feels changes must be made in the employee retirement program, the present plan should be retained for the three fully-vested employees (Leah Richmond, Dorothy Thompson, and Peggie Branham).
- (B) The Council should be reminded that a 10% limit has been placed on the CPI adjustment under the pension plan, with integration of Social Security increases to further reduce the pension benefit. The trustees felt that there should be no further reduction in this provision of the retirement program at this time.
- (C) If the Council feels that any significant changes must be made in the employee retirement program, no such changes be considered until competitive proposals from new sources are presented. The Board further recommended that an audit of the present plan, including present values of benefits, be made by an independent actuary.

McCrary moved that the Council accept the recommendations of the Ad Hoc Committee with two exceptions: (1) there be an annual review by the Board of Trustees to monitor the effect of inflation on the retirement benefit of employees and that the Board report to the Council on the monitoring of the inflation factor, and (2) that appropriate action be taken so that Miss Thompson and Dr. Long would not be penalized in retirement benefit because of the change to the defined contribution plan.

Chairman Burge expressed appreciation to the Ad Hoc Committee for their work. He then asked for a show of hands on voting members of the Council present and asked that the Council members not abstain from voting on the issue.

Wilkins made a substitute motion that there be no mandatory 3% contribution by the employees. Mann pointed out that this would reduce the retirement benefit of the employees. Figures were presented which in-



licated that four employees would have their retirement benefit reduced if such a plan were adopted.

Andrews then made a substitute motion that the Council accept the report of the Ad Hoc Committee with the following exceptions:

- (A) employees not be required to contribute 3% of their salary to the plan;
- (B) the Society contribution to the plan be 11% of salary for each employee.

The motion carried with two opposition votes.

The motion by Wilkins was then withdrawn.

The Council met on Sunday, November 16, 1980, at the Sheraton Inn in Fort Smith and transacted the following business:

1. Approved actions of the Executive Committee in meetings held on September 24th and October 30th. The actions of the meeting on October 30th were as follows:

- (A) Discussed a request from the Arkansas Junior Medical Auxiliary for a contribution to defray the expenses of a Financial Planning Seminar to be held November 8th at the Medical Center. The Executive Committee voted to approve this request.

- (B) Discussed the membership application of Dr. Nabil K. Bissada who is located in Saudi Arabia. After much discussion, it was felt that Dr. Bissada should be continued as a member of the State Society and recommended that his dues be accepted and carried on the rolls as a member of the State Society. The Executive Committee realized that this did not follow precedent but in view of his desire to continue membership and the fact that he had been a member in good standing when he left the United States and there was no way for him to participate in any county activities that an exception should be made in this case.

- (C) Approved sending James Weber to the Seventh American Medical Association State Health Legislation meeting in Key Biscayne, Florida, January 4-7, 1981.

- (D) Considered the request from Linda Bilheimer, Arkansas Department of Health, who had requested appointment of a member to the Long Term Care Task Force and recommended that a member

of the headquarters staff serve in this capacity until such time they felt there would be need for physician-member input.

2. Kemal Kutait, Chairman of the Reorganizational Study Committee, presented a report from his committee. The Council voted on each recommendation from the committee.

Recommendation No. 1: The immediate past president of the Society be made a voting member of the Executive Committee of the Council.

The recommendation was referred to the Constitutional Revision Committee.

Recommendation No. 2: Delegates be elected by the county society to serve for the calendar year based on the State Society membership of the component society at the end of the prior year.

The recommendation was referred to the Constitutional Revision Committee.

Recommendation No. 3: The nominating committee be selected as it is now with one member from each district selected by members of the House from that district (hopefully this would be done at a councilor district meeting held prior to the annual session) and the members of the nominating committee confirmed by the House and announced on the first day of the annual session. The nominating committee would be required to submit its proposed slate of officers of one or more nominees for each position by February 1. The report would then be published in the convention issue of the Society Journal. The election process would otherwise be carried out as at present.

The Council voted to delete the words "as it is now" in the first sentence of the recommendation.

The Council voted to refer the recommendation as amended to the Constitutional Revision Committee.

The committee also requested authority from the Council to ask the Society's legal counsel to meet with the committee to explore the advisability of employment contracts for executives of the headquarters staff. During the discussion of this request, the committee advised the Council that it asked for authorization because it felt hourly charges for

legal fees would be involved and that the intent of the committee was only to explore the advisability of employment contracts. The committee would consider information received and decide on whether or not to make any recommendations to the Council. Legal counsel advised that costs involved would be covered by the retainer; therefore, no action was taken by the Council.

3. George Mitchell, president of Arkansas Blue Cross-Blue Shield, discussed medical care costs and the proposed establishment of the Arkansas Commission on Health Care Cost Effectiveness. The Council voted to endorse the concept of the proposal as presented by Dr. Mitchell.
4. The Council voted to authorize expenses for five officers of the Society to attend the 1981 Leadership Conference of the American Medical Association. The five physicians are in addition to the president and president-elect who would automatically be authorized to attend by earlier Council action.
5. Heard legal counsel discuss a proposal for Association Professional Liability Insurance. The Council agreed to provide legal counsel and indemnity to the staff of the Arkansas Medical Society in the event of suit arising out of activities relevant to the duties of the staff, except for willful misconduct. A decision on a policy providing liability insurance was deferred until further study could be made by legal counsel.
6. William Jones presented information he had compiled on the reserve funds of the Society. He moved that the Council of the Arkansas Medical Society recommend to the House of Delegates at its meeting on November 16 that dues be reduced to \$175 effective January 1, 1981. After discussion, Williams made a substitute motion directing the Budget Committee to thoroughly study the Society reserves and report to the Council at its next meeting.  
Dr. Williams' substitute motion carried.
7. The Council directed that an official expression of appreciation be forwarded to American Physicians Insurance Exchange for hosting the cocktail party on Saturday, November 15th.

The Council convened in Executive Session to consider the proposed budget for 1981.

1. R. Jerry Mann moved acceptance of the proposed budget for 1981. William Jones made a substitute motion that the 1981 proposed budget be taken up after the Council has considered the report from the Budget Committee on reserves and a possible reduction in dues. The substitute motion carried.
2. The Council approved implementation of the salary increases proposed by the Budget Committee effective January 1, 1981.
3. Chairman Burge announced that he had selected John Hestir as his appointment to the Budget Committee to succeed Ken Lilly. Asa Crow moved that the Council rescind its previous action prohibiting Budget Committee members from succeeding themselves and that Ken Lilly be reappointed to the Budget Committee. A secret ballot was called for on the Crow motion. The motion lost.  
The Council approved appointment of John Hestir to the Budget Committee.  
The Council voted to change the terms of membership for staggered terms on the Budget Committee to a calendar-year basis.

The Council met on Sunday, February 1, 1981, at the Camelot Inn in Little Rock and transacted the following business:

1. Approved the report of the Executive Committee covering meetings held November 26, 1980; December 17, 1980; and January 28, 1981. The actions of the meeting on November 26th were as follows:
    - (A) Approved the report of the Legislative Committee as made at the mid-winter meeting and recommended that it be the position of the Society in regard to the upcoming session of the Legislature.
    - (B) Approved the rental of an apartment for Ken LaMastus starting in December rather than January to cover the special work being done for Governor-elect White in regard to the assessment of the Arkansas Health Department.
- The actions of the meeting on January 28th were as follows:
- (A) Approved the nomination of physicians to serve on the Regional Medicaid Drug Utilization Committee as follows: Region I, Dr. Nathan Austin of Russellville; Region IV, Dr. Horace L. Green and Dr. William F. Harper, both of Pine



Bluff, and Region V, Dr. Asa Warmack of Hope.

- (B) Directed that repeat attendance at the American Medical Association Leadership Conference would not be authorized for Society officers and councilors for at least five years after their initial attendance, with the exception of those attending in their capacity as president and president-elect.
  - (C) Discussed the position of the State Health Director and voted unanimously to recommend Dr. Asa Crow to Governor White for his consideration of this appointment.
  - (D) Heard a lengthy discussion and gave considerable consideration to the recent "20/20" program relative to Boone County and Dr. Rhys Williams. The Executive Committee voted to refer this to the Society's grievance committee for their investigation and decision concerning any appropriate action which the Society should take.
2. James Weber reported on an AMA conference on state legislation which he attended as a representative of the Society.
  3. Legal Counsel Mike Mitchell reported to the Council on the lawsuit by the Arkansas State Nurses Association naming the Society, Dr. Kutait, and Dr. Weber as defendants. Mr. Mitchell advised that on behalf of the Society, Dr. Kutait, and Dr. Weber, he would file on February 2, 1981, a motion to dismiss the complaint for failure to state a claim under the Sherman Anti-Trust Act.
  4. Mr. Mitchell reported to the Council on his study of the two proposals received regarding association professional liability insurance. The Council voted to appoint an ad hoc committee to be charged with presenting recommendations to the Council on (1) the feasibility of purchasing such coverage, and (2) selection of a policy. The chairman is to make appointments to the ad hoc committee.
  5. The Council appointed Sybil Hart of Blytheville to the First Councilor District Professional Relations Committee.
  6. Frank Morgan, chairman of the Annual Session Committee, briefly reviewed proposed changes in the evening functions during the 1981 Annual Session. The proposal was for the Blue Cross-Blue Shield party to be held on Sunday evening, a western-style party on Monday evening as the only function with ticket sales, and the inaugural ceremony on Tuesday evening to be staged theatre-style and followed by the Council-hosted reception. There would be no banquet. The Council voted approval of the recommendations of the Annual Session Committee as presented by Dr. Morgan.
  7. James Weber reported to the Council for the Committee on Medical Legislation. He indicated that the major issues before the Legislature are the proposed bills on abortion, Medicaid fraud, and licensing of social workers. He expressed appreciation to the physicians who served as "Doctor of the Day" during the legislative session.
  8. The Council voted to endorse the Advanced Trauma Life Support Course sponsored by the American College of Surgeons and to contribute \$500 toward financing of the initial course. The Council further voted to recommend that the State Health Department give financial support to the program.
  9. The Council voted to postpone action on a request for Society endorsement of hospice programs until the president of the Arkansas Hospice Association, Carolyn Wilson, could be present to discuss the issue with the Council.
  10. The Council heard Mrs. Warren Boop, president of the Arkansas Medical Society Auxiliary, discuss the tax status of the Auxiliary. The Council voted to endorse the Auxiliary's decision to apply for a tax-exempt status.
  11. The Council approved a request from the Board of Trustees of the Pension Plan that they be authorized to expend up to \$1,000 to engage an independent enrolled actuary for a review and evaluation of the pension plan and the figures presented to the Society and the plan participants. Stanley Applegate, speaking for the Board of Trustees, advised that the Board will report back to the Council at its April meeting.
  12. Ken Lilly, as chairman of the Budget Committee for the 1981 Society budget, reported that the committee had studied the reserves of the Society and recommended that there be no change in the dues at this time. Dr.

Lilly's motion was approved by vote of the Council.

13. Ken Lilly presented the proposal from the Budget Committee for the Society's 1981 budget. He presented the Budget Committee's recommendation that committee members not be paid mileage for travel to committee meetings. The proposed budget was approved by the Council.
14. The Council voted support and endorsement of the Professional Standards Review Organization of the Arkansas Foundation for Medical Care. The Council directed that the Arkansas Congressional delegation be contacted urging support of the PSRO program.

#### **Report of the Executive Vice President C. C. Long, M.D.**

During the year of 1980, the executive staff of the Medical Society was involved in a number of projects.

There was a continuation of the efforts to obtain placement of physicians in the State, particularly in the rural areas. We were successful in establishing approximately one hundred thirty contacts between physicians and communities desirous of getting doctors and we feel that we were directly responsible for twelve to fifteen physicians establishing practice in our State.

The Society staff has also worked closely with the Rural Health Development office in providing information and advice to rural communities as to efforts they might make to improve their chances of getting and retaining physicians. This has been a three-party effort—the Medical School's placement division as well as the office of Rural Health Development and the Medical Society. I feel that a new level of cooperation between the three has been reached and that this has been beneficial and productive in obtaining physicians in the State.

The staff has also worked with Burroughs Wellcome Drug Company in obtaining physicians to participate in their radio programs. Tape recordings have been made by some seventy-one physicians to be used as a public service information type program by radio stations.

There has been an ongoing effort with the committees of the State Legislature during the year, particularly the Budget Committee and Public Health Committee. We have attended most, if not all, of the meetings of these committees. Also

we presented information to the State Health Coordinating Council and the Health Systems Agencies in the State in areas pertaining to health care, certificate of need and other pertinent points of discussion.

In late November, Governor-elect White requested that the Arkansas Medical Society, along with other interested citizens, evaluate the programs and budget of the State Health Department. A week was spent in doing this. The Executive Committee, along with the Legislative chairman and the chairman of the Medical Services Review Committee, worked every day and evening for approximately one week. They were joined by others representing some of the other related fields, such as pharmacy, veterinary medicine, dentists and also from the general business community, in evaluating the programs and the proposed budget of the Health Department and came up with a detailed recommendation for Governor-elect White to use in his program planning.

In addition to these special tasks, the routine work of the office occupied the time of all members of the staff. This included maintenance of membership, rosters, the planning of general meetings and committee meetings, and planning and staffing of a delegation that went to Washington and met with our national representatives.

#### **Budget Committee Ken Lilly, M.D., Chairman**

The Budget Committee submitted the following budget for 1981. The complete budget, as presented to the Council, is available to members upon request.

INCOME	
<i>Budget Item</i>	<i>1981 Budget</i>
Membership Dues	\$392,182.00
Journal Advertising	26,000.00
Booth Income	10,000.00
Annual Session	3,000.00
AMA Reimbursement	3,500.00
Miscellaneous and Rosters	3,000.00
Interest	45,000.00
Specialty Desk	600.00
Intrav Reimbursement	1,000.00
Ark. Foundation for Medical Care	22,050.00
Continuing Medical Education	500.00
	<hr/>
	\$506,832.00



# EXPENSES

<i>Budget Item</i>	<i>1981 Budget</i>
Salaries	\$173,832.00
Travel and Convention	40,000.00
President's Travel	1,500.00
Taxes	11,500.00
Retirement	19,121.00
Stationery and Printing	5,000.00
Office Supplies and Expenses	12,500.00
Telephone and Telegraph	12,000.00
Rent	24,000.00
Postage	16,000.00
Insurance and Bonds	9,500.00
Auditing	2,500.00
Council Expense	6,000.00
Lobbying Activities	2,000.00
Journal Printing	50,000.00
Annual Session	18,500.00
Winter Meeting	2,000.00
Dues and Subscriptions	4,500.00
Gifts and Contributions	1,000.00
Woman's Auxiliary	1,200.00
Legal Services	16,000.00
Special Committee	1,000.00
Rural Health	550.00
Miscellaneous	250.00
Freight and Express	25.00
Office Equipment	3,000.00
Continuing Medical Education	500.00
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	\$433,978.00

## Medical Education Foundation for Arkansas

### Robert Watson, M.D., President

The Medical Education Foundation for Arkansas was founded in 1962 by the Arkansas Medical Society. The stated purpose of this Foundation is to promote and support worthy means of bettering medical education in Arkansas.

This Foundation is financed by a \$5.00 a year commitment from dues of each member of the State Medical Society, from memorial donations, and from investment income.

A most satisfactory means of fulfilling the intent of this Foundation has evolved. During the past several years, a series of continuing teaching presentations has developed for the University of Arkansas College of Medicine, known as the Arkansas Medical Society lecture programs. Eight presentations are made each year by nationally-recognized educators and physicians from throughout the country through which appro-

priate subjects are presented to the students and faculty of varying academic levels.

These programs have become most popular with both students and faculty, and are identified to both as "The Arkansas Medical Society Lectures."

Through the support of the State Medical Society and through conscientious stewardship of your Foundation board, this educational program is assured of continuing service to the medical students, to the Medical School, and to the State Medical Society.

## Report of the Political Action Committee

### Ken Lilly, M.D., Chairman

The Board of Directors of Ark-PAC met during the Arkansas Medical Society meeting in Hot Springs in April 1980. At that meeting, the Board elected Virginia Kutait as secretary-treasurer and Ken Lilly as chairman. Dr. John Giller, an Orthopaedic Surgeon from El Dorado, discussed with the board his campaign for Lieutenant Governor of the State of Arkansas.

The Board was advised that the Federal Election Commission and the American Medical Association Political Action Committee had finalized a conciliation agreement. Under the terms of the agreement, the national and state medical political action committees were designated "connected" committees. As "connected" committees, Ark-PAC and AMPAC aggregate contributions to any candidate cannot exceed the contribution limitations of FEC regulations. Ark-PAC subsequently signed a conciliation agreement with the FEC containing the same provisions of the AMPAC agreement.

The Board was advised that FEC regulations now require the committee name to include the complete name of the organization with which it is affiliated. The Board subsequently voted to change the committee name to the Arkansas Medical Society Political Action Committee.

The Board met again in August 1980. Bill Clark, candidate for the United States Senate, and Frank White, candidate for Governor, appeared before the Board to discuss their campaigns. Representatives of the Arkansas State Nurses Association met with the Board to discuss formation of a political action committee by the nurses.

The Board voted to increase the suggested contribution amount for PAC to \$40 for active membership of an individual physician, \$99 for sus-

taining membership of an individual, and \$65 for family memberships.

The Board voted to use promotional materials at the 1981 Annual Session of the Arkansas Medical Society in an effort to increase participation in PAC.

The Board met again in September 1980 and heard Bill Clinton discuss his candidacy for Governor.

The PAC Board met in connection with the winter meeting of the Arkansas Medical Society. There was considerable discussion regarding the committees' financial support of candidates during the 1980 elections, the political philosophy of those contributions, and the committee's obligation to the members of PAC.

#### **Report of the**

#### **Arkansas Foundation For Medical Care**

**Paul C. Schaefer, Executive Director**

Challenges continue to face the PSRO program, both on a national scale and in Arkansas. The Arkansas Foundation for Medical Care has been blessed with active physician support and with cooperation from both physicians and hospitals as it carries out its mandate to assure that federally-funded patients receive a quality of care that meets professionally recognized standards, and that there is effective utilization of hospital resources by these patients. Because of better data profiling capabilities, however, as well as the squeeze on amount of Federal dollars for review, physicians and hospital medical staff committees are being asked to critically review their patterns of practice and make appropriate changes as necessary.

Arkansas continues to have one of the highest admission rates for Medicare beneficiaries in the country and this, coupled with the low length of stay, raises many questions about unnecessary or diagnostic admissions to Arkansas hospitals. In-depth review and tough decisions are having to be made by utilization review committees in Arkansas hospitals to address these issues. Recent data shows continuing increasing trends in admission rates in Arkansas, which means that there will be continuing pressure both from the national level and from the Arkansas Foundation for Medical Care on hospitals to address this concern and take appropriate action to correct it when it is proven to be a problem.

In this regard, the AFMC is modifying its profile analysis capabilities to provide more detailed information to hospitals and their committees to identify where variations from norms are actually occurring. When these variations are actually identified, they tend to pinpoint specific physicians. Through its new case-mix analysis program, the AFMC plans to compare physicians who have similar types of practice. The AFMC will focus in its review activities on those physicians that are in wide variation from their peers.

Procedural changes have also occurred within the AFMC this year to streamline the review process. One major change occurred in the monitoring activities of the AFMC. Previously, hospitals have been monitored generally through unannounced site visits and random selection of charts. Now, with the help of our computer, patients having common characteristics can be profiled and where variations of specific types of patients are identified, evaluation of records of these patients can be accomplished to determine the cause of these variations. Once aberrant patterns are identified, hospital UR Committees can implement necessary and appropriate action.

The area of quality assurance has also seen major revisions. Part of these were influenced by changes made by the Joint Commission on Accreditation of Hospitals in its Quality Assurance Standard, which was approved for implementation in January of this year.

The Health Standards and Quality Bureau, in conjunction with the JCAH, has recognized that Medical Care Evaluation Studies have improved tremendously over the last few years, but a primary concern has surfaced and that is that emphasis has been on the number of studies performed, rather than on the improvement or impact in patient care resulting from MCE Studies.

For these reasons, PSROs have been required to modify their quality review activities. Emphasis is now being placed by the AFMC on both PSRO and hospital impact; that is, a demonstration of resolution or reduction of problems important to patient care rather than the demonstration of "good" care. PSRO and hospital compliance with this new policy will be measured in part by the importance of the problems addressed and by their resolution.

Other challenges continued to face the program and one of these was the action taken by the



House of Delegates of the American Medical Association at their Mid-Winter meeting in San Francisco.

By a vote of 100 to 104 (about 75 of the delegates had gone home), the House voted to withdraw its support of PSRO. This could endanger the continued existence of the system, because the action comes at a time when the new administration will be looking for ways to save money. The AMA and the Arkansas Medical Society historically opposed the legislation creating the review system, but it became apparent that Congress was going to impose some sort of control on hospital care of federally-funded patients.

When Senator Bennett proposed his amendment putting the review under control of physicians, the AMA and the Arkansas Medical Society reversed their position and supported the establishment of PSROs. The Arkansas Medical Society established the Arkansas Foundation for Medical Care to administer this program in our State.

The election of President Reagan and a conservative Senate has led some physicians to assume that all controls will be removed and the practice of medicine will be as free as it was before Medicare and Medicaid. Unfortunately, that cannot happen. The Civil Service Law protects the bureaucrats who are imbedded in our governmental structure, and they will remain long after the Reagan Administration is forgotten. A great many of them are dedicated to controlling the practice of medicine. Should the present PSRO system be discarded, another system, probably without doctor participation, would replace it within a short time.

It would really be a tragedy to have a PSRO dominated by a consumer organization or other lay group. To forestall such a development, it is hoped that the Arkansas Medical Society will at this Annual Session adopt a resolution reiterating its support of the present PSRO system and notify the Arkansas Congressional Delegation of its stand.



April, 1981

# THE JOURNAL OF THE Arkansas MEDICAL SOCIETY

Vol. 77 No. 11

FORT SMITH, ARKANSAS

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# Feelings vs.

*Some people feel that I am misused and overused and that I'm prescribed too often and for too many kinds of problems.*

The FACT is that approximately eight million people, or about 5 percent of the U.S. adult population, will use me during the current year. By contrast, the national health examination survey (1971-1975) found that 25 percent of the U.S. adult population experiences moderate to severe psychological distress. Additionally, studies of patient attitudes revealed that most patients have realistic views regarding the limitations of tranquilizers and a strong conservatism about their use, as evidenced by a general tendency to decrease intake over time. Finally, a six-year, large-scale, carefully conducted national survey showed that the great majority of physicians appropriately prescribe tranquilizers.

*Some people feel that patients being treated with anxiolytic drugs are "weak," can't tolerate the anxieties of normal daily living, and should be able to resolve their problems on their own without the help of medication.*

The FACT is that while most people can withstand normal, everyday anxieties, some people experience excessive and persistent levels of anxiety due to personal or clinical problems. An extensive national survey concluded that Americans who do use tranquilizers have substantial

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# Interventional Radiology and the Cancer Patient

Sidney Wallace, M.D., Vincent P. Chuang, M.D., Jesus Zornoza, M.D., and Michael Cohen, M.D.\*

Interventional radiology extends the percutaneous diagnostic techniques already employed by the radiologist in a more aggressive and invasive approach to the diagnosis and therapeutic management of the patient. Vascular occlusions, infusions, and dilatations are now percutaneous techniques adapted from operative procedures. Percutaneous biopsies and aspiration and drainage procedures became the province of the radiologist when radiologic equipment allowed precise localization and ready access to the disease process. These interventional radiologic techniques are particularly applicable to the management of the cancer patient.

In the performance of these invasive procedures, the radiologist must be aware of the possible complications and must be prepared to handle the acute problems. Consultative support must be available to manage other complications and side effects. This support is as essential to the radiologist as it is to all other physicians requiring assistance with problems outside their immediate realm.

Our medical and surgical colleagues must realize that these interventional procedures are capable of great rewards but also of risks and complications. Once the radiologist participates in these procedures, he immediately shares the responsibilities with the other clinicians from the medical, moral, and legal points of view. The radiologist must assess the costs to the patient and to himself. Many of the intravascular and biopsy techniques result in increased exposure to the radiologist. Radiation exposure must always be an important consideration in exploring the patient who may have an overwhelming disease. The hoped for remission of weeks should be weighed against the accumulated radiation exposure to the radiologist.

Technical advances have played an integral part in the evolution of interventional radiology. The advent of image intensification allowed the direct unencumbered visualization of the areas of interest. More recently, the addition of ultrasonography and computed tomography have contributed immeasurably to the localization for all these procedures.

Essential to interventional radiology is the availability of research facilities to insure that these techniques have a sound experimental basis. Our laboratory at M. D. Anderson Hospital was established for problem solving, a place where the difficulties in the clinical setting are defined, interpreted, and investigated. Once the solutions are achieved, they are translated into patient care.

## Percutaneous Biopsy and Aspiration Techniques

Employing radiographic ultrasonic, computed tomographic and particularly fluoroscopic guidance, percutaneous biopsy procedures have obtained adequate tissue specimens for histologic and cytologic evaluation of lesions of the lungs, heart, breast, liver, pancreas, kidneys, adrenals, lymph nodes, intra-abdominal and retroperitoneal masses, and bones. Percutaneous biopsies of the orbit and brain, monitored by computed tomography, have been reported recently.<sup>1,2</sup>

Over 400 percutaneous biopsies and aspiration procedures are performed each year by the radiologists at M. D. Anderson Hospital and Tumor Institute. The primary objective of the majority of these procedures is to establish the diagnosis and to initiate therapy, thereby frequently obviating the need for surgical intervention. An interested cytologist is essential to the success of these biopsy procedures. Biopsy procedures should be performed only when the results will influence management. If a patient is to be treated without regard to the results of biopsy or drainage, then the rewards do not justify the risks.

\*From the Department of Diagnostic Radiology, University of Texas System Cancer Center, M. D. Anderson Hospital & Tumor Institute, Houston, Texas 77030.

Presented by Dr. Wallace at the annual meeting of the Arkansas Medical Society, April 21, 1980, Hot Springs, Arkansas.



### Chest

*Lung:* Percutaneous needle aspiration and biopsy of the lung, as well as endobronchial brush biopsy, are established radiologic procedures. The indications are summarized by Sargent, et al.<sup>3</sup> The success and complications depend upon the nature, size and location of the process, and the status of the patient and his lungs, as well as upon the experience, competence, and confidence of the radiologist and cytologist.

Possible pneumothorax, bleeding, air embolism and tumor cell dissemination are the major obstacles to the general acceptance of the percutaneous needle biopsy of pulmonary lesions. In our series utilizing fine needle aspiration of localized nodular lesions, the pneumothorax rate was 14%, with few of the cases requiring chest tubes. The 23 gauge needle was found to provide sufficient tissue for cytologic diagnosis was obtained in 87%.<sup>4</sup>

When the lesion is in close proximity to or in continuity with the pleura and chest wall, larger specimens can be obtained safely by using an 18 gauge needle or even a Vim Tru-Cut bayonet-shaped needle which will provide a biopsy measuring 1 mm x 1 mm x 2 cm.

*Heart:* Transjugular endomyocardial biopsy is employed at Stanford University primarily to assess the status of rejection of cardiac transplants. Recently, this procedure has found application in the evaluation of cardiac toxicity due to Adriamycin.<sup>5</sup> This approach allows for closer monitoring and greater utilization of this very effective chemotherapeutic agent. Consequently, more individualization has taken place, making possible a dosage of as much as three times that which is ordinarily prescribed.

Cardiac tamponade is the primary complication associated with transjugular endomyocardial biopsy. In our first 170 patients (1.8%), there were three instances of cardiac tamponade occurring in the first 50 patients. The incidence of tamponade at Stanford University is less than .05%.<sup>5</sup>

### Abdomen

*Pancreas:* Once the area in question has been localized radiologically, the diagnosis of carcinoma of the pancreas and pseudocyst can be established by the percutaneous approach.<sup>6,7</sup> Aspiration biopsy of the pancreas is readily accomplished utilizing a 23 gauge needle. In the obese

and muscular patients, the abdominal wall is penetrated with an 18 gauge needle through which a 23 gauge needle is passed for the biopsy. If this procedure fails, a 20 gauge needle may be employed. The diagnostic yield is approximately 70%. Failure sometimes occurs in the biopsy of the larger palpable tumors because of associated inflammation and/or necrosis.

*Liver:* Conventional liver biopsy technique remains the procedure of choice in patients with diffuse parenchymal liver disease; however, its accuracy decreases in the presence of focal malignant disease. Fine needle aspiration biopsy employs several methods of localization to assist a more accurate approach. Our results produced 79% correct diagnoses.<sup>8</sup> Only those cases with an unresolved clinical problem were biopsied. Obvious cases of metastatic disease were biopsied by the conventional approach.

Aspiration biopsy allows puncture of lesions of the left lobe of the liver as well as biopsy in jaundiced patients for whom a Menghini biopsy is frequently contraindicated. Aspiration biopsy of the left lobe is easier to perform because the lesions are better localized by ultrasonography or CT, and the anterior approach is more direct. Fine needle aspiration biopsy of the liver is a readily performed, highly accurate diagnostic technique with minimal complications.

The transjugular approach to biopsy of the liver has been recommended to decrease the complications of hemorrhage.<sup>9,10</sup> This is especially applicable in patients with less than optimal clotting parameters. Patients with hypervascular liver neoplasms and cirrhosis are more safely biopsied by this approach.

*Lymph Nodes:* The percutaneous approach to the para-aortic and pelvic lymph nodes using a small caliber needle represents a simple technique to establish or confirm the presence of metastases, thereby obviating, in selected cases, the need for exploratory laparotomy.<sup>11</sup> The histologic verification of inoperability or recurrent retroperitoneal disease also can be established readily by this technique. In view of the position of the para-aortic and pelvic lymph nodes in relation to the great vessels and in consideration of patient comfort, an anterior transperitoneal approach seems more suitable. The sites of biopsy of a previously opacified lymph node will differ depending upon the histologic types of neoplastic disease. The

most common lymphangiographic finding seen in metastatic carcinoma is a defect in a node not traversed by lymphatics. The remaining normally functioning portion of the node frequently appears as a crescentic configuration representing a node partially replaced by neoplasm. Consequently, the greatest yield would result from a biopsy of that part of the node just above the crescentic area (Figures 1A, 1B).

Aspiration biopsy of a lymph node containing metastatic carcinoma is more successful (85%) than of those containing lymphoma (50%). Epithelial metastases, especially those originating in pelvic viscera, are frequently highly cellular, poorly vascularized and readily distinguishable from the normal cells of a lymph node.<sup>11</sup>

Percutaneous transperitoneal lymph node biopsy involves the passage of a needle into the peritoneal cavity and through solid and hollow viscera. The potential complications, such as intra-abdominal bleeding, pancreatitis and bowel perforation with peritonitis, were not encountered

in our study. The possibility of disseminating neoplasm by aspiration biopsy does not seem to present a significant problem.

**Kidney:** Percutaneous biopsy of the kidneys has been utilized in the diagnosis of both benign and malignant disease. Controversy still exists concerning the possibility of seeding malignant cells along the needle tract. Percutaneous puncture is especially advantageous in the diagnosis and management of patients with simple cysts of the kidney. Once a cystic lesion is established by nephrotomography, ultrasonography, computed tomography, and/or angiography, cyst puncture can be performed for verification. Carbon dioxide and water soluble contrast material are exchanged for the cyst fluid which is then examined for cytology and biochemical content. Thus, the nature of the cystic lesion is established. With the use of ultrasonography and computed tomography, the number of cysts detected is impossible to verify by puncture. Our present policy is to obtain two diagnostic studies to establish the diagnosis of a cyst. Puncture is reserved for those situations in which confusion as to the diagnosis remains.

Hematuria may be due to iatrogenic arteriovenous fistulae which is the most serious complication of this procedure, occurring in 16%. Most of these complications resolve spontaneously, 4% persist and may result in hematuria, hypertension, and congestive failure. Transcatheter management of these fistulae is possible at times.

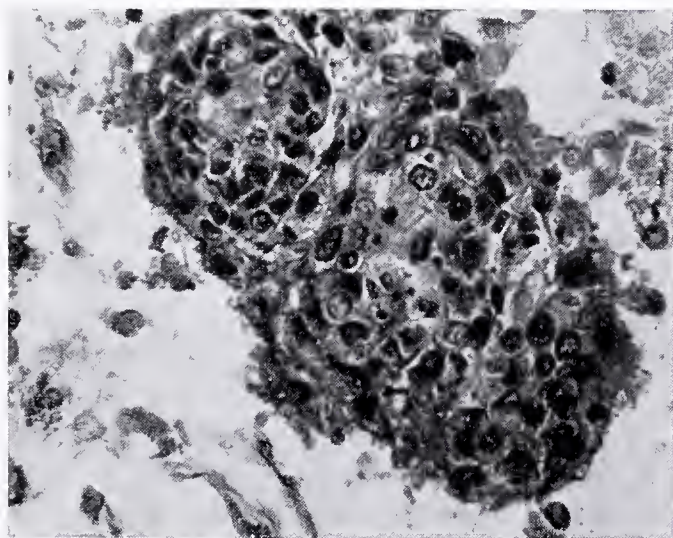
**Abdominal and Paravertebral Masses:** The technique employed is the same as that for pancreas and lymph nodes.<sup>6</sup> Abdominal masses usually are approached anteriorly and the posterior approach is used for paravertebral masses, renal and adrenal masses. Localization has been performed utilizing any or all of the radiographic methods available, with fluoroscopy the most frequently employed. Ultrasonography and CT are used sparingly and only with small or difficult masses. The accuracy has been rewarding in that 90% have resulted in specific diagnoses. No significant complications have been encountered.

**Bone:** Needle biopsy of skeletal lesions is easily accomplished by the percutaneous approach. Although this technique has been available for many years, only recently has the radiologist become interested. Adequate material is obtained in 92% of biopsies and the diagnosis established in 83%



Figure 1.  
Percutaneous aspiration biopsy of lymph node. Metastasis from carcinoma of the cervix.

A. The biopsy is done in the area just above the crescent.



B. Specimen demonstrating squamous cell carcinoma.



of cases.<sup>12</sup> No complications have been encountered so far, but the potential problems of trauma to vessels, nerves and viscera do exist. The benefits include rapid and accurate establishment of a tissue diagnosis, avoidance of a surgical procedure with its associated risks and costs, and simplicity and safety, facilitating repetition of the procedure if necessary.

### **Therapeutic Drainage Procedures**

Percutaneous drainage techniques utilizing radiographic localization are available for the management of cysts and abscesses in and about the liver, kidney, abdomen, retroperitoneum and lung.

**Cysts:** Renal cysts may decrease in size after puncture. With the addition of Pantopaque to the cyst, reduction in the size can be accomplished in 85%. Cyst puncture is employed as a therapeutic measure if the cyst is symptomatic, i.e., if pain or discomfort is present because of size and position or if a cyst is encroaching on the collecting system. Pantopaque instillation sometimes is effective in sclerosing a symptomatic liver cyst. Liver cysts can be punctured and opacified for diagnostic and therapeutic purposes. Adrenal cysts have been approached in a similar manner.

**Abscesses:** Puncture and drainage of abscess cavities, wherever they may be found, can be managed by the percutaneous approach.<sup>13,14</sup> Once the abscess is localized radiographically, puncture and drainage are accomplished utilizing wire and catheter. Two catheters, preferably pigtail in configuration with multiple side holes, are placed into the cavity to allow adequate drainage and irrigation. Antibiotics are injected to facilitate management. Multiple loculated abscesses are best managed surgically.

**Biliary Drainage:** Percutaneous transhepatic puncture and drainage of the biliary tract have proven extremely helpful in the management of obstruction usually secondary to neoplasm.<sup>15</sup> It is preferable to cannulate the common duct and place the catheter within the duodenum. At times, this must be delayed for a few days during drainage proximal to the obstruction. Afterwards, catheterization may be more readily accomplished. Drainage of the left biliary ducts is preferable when dilatation is more obvious in this portion of the liver.

**Nephrostomy:** Decompression by percutaneous puncture and catheterization may be beneficial

in the management of an obstructed urinary tract.<sup>5</sup> Ultrasonography is especially helpful in localization. The technique utilized is the same as that described for each of the other procedures.

**Direct Chemotherapeutic Instillation:** Results of direct puncture and instillation of corticoids in cases of eosinophilic granuloma of bone have been encouraging. Five of seven children treated in this manner have had significant improvement in three to six months after the instillation of 150 mg of methylprednisolone.<sup>16</sup>

### **Intravascular Therapy of Neoplasms**

Many interventional procedures were initially performed out of desperation but were soon incorporated into primary therapeutic management. The percutaneous approach to the vascular system routinely used for angiography provides the avenue for intravascular occlusive and infusion therapy primarily via selective catheterization of the arterial supply of the neoplasms. Of the 100 angiographic examinations performed each month at M. D. Anderson Hospital, about 60% are interventional. Percutaneous transcatheter intra-arterial infusion of chemotherapeutic agents is employed in the majority of such examinations, although 10 to 15 arterial embolizations are performed each month.

### **Methods of Occlusion**

The embolic substances used most frequently at our department include Gelfoam (absorbable gelatin sponge), Ivalon, and stainless steel coils. A variety of other materials are available including autologous clot, autologous tissue, Oxycel, silicones, cyanoacrylates, metallic spheres, balloons, etc.

The combination of Gelfoam particles for the peripheral arterial bed and stainless steel coils for central vascular obstruction is employed in most of our patients. The Gelfoam particles are cut into cubes of 3 mm. Once the tumor and peripheral branches are embolized, flow slows considerably. Gelfoam segments 3 x 3 x 20 mm are injected. Coil occlusion is reserved for the central larger vessels. Stainless steel coils\* are available in 3 mm, 5 mm, and 8 mm helix diameters and can be instilled via the 5 French or 6.5 French polyethylene angiographic catheters.<sup>17,18</sup>

**Indications:** Arterial embolization and occlusion have been effective in the treatment of renal carcinoma, primary and secondary hepatic neo-

\*Cook Incorporated, Bloomington, Indiana.



plasms, and benign and malignant tumors of bone. The indications for transcatheter embolization of neoplasms are: (1) to control hemorrhage; (2) preoperatively to facilitate resection by decreasing blood loss and operating time; (3) to inhibit tumor growth; (4) to relieve pain, and (5) to stimulate an immune response to the ischemic neoplasm.

**Kidney:** One hundred patients with renal carcinoma have been managed by renal artery occlusion employing Gelfoam and stainless steel coils (Figures 2A, 2B). Arterial occlusion was initially performed to facilitate the removal of a hypervascular neoplasm. Subsequently, a protocol of infarction, treatment with nephrectomy and hormonal therapy with methoxyprogesterone was designed for the management of 49 patients with metastases limited primarily to the lung and/or bone. Another 26 patients with extensive metastases, especially to the liver, were treated by renal infarction in order to palliate pain and hemorrhage. In a third group of 25 patients without metastases, renal artery occlusion was performed prior to nephrectomy.<sup>19,20</sup>

**Local Tumor (No Metastases):** These 25 patients with no known metastases were embolized prior to surgery. Twenty-four to 72 hours after embolization yielded optimal conditions for the operative procedure. Fifteen patients are alive, with a median survival of 24 months and a range of two to 61 months. Ten have died, with a median survival of 13 months and a range of three to 47 months.

**Limited Metastases:** This group of 49 patients was treated by a planned protocol which included renal infarction, a delay of days, radical nephrectomy, and Depo-Provera hormonal therapy. In this group, 35 of the 49 had lung metastases; in 22 of these patients, the metastases were exclusively in the lungs. The embolization was performed up to 12 days, usually four to seven days, prior to nephrectomy, with one patient with a 10-month interval.

Evaluation of the effect of this therapeutic regime was made in relation to the pulmonary metastases. A complete response with a disappearance of the metastases occurred in seven patients. A partial response where the product of the two maximum perpendicular diameters had decreased by at least 50% was noted in five patients. A third group emerged in which the

patients had metastases that did not progress over at least 12 months. This category was considered to exhibit stabilization of disease. If the stabilization group is considered, the overall response rate is 36%.

**Extensive Metastase:** Of this group of 26 pa-



Figure 2.  
Transcatheter occlusion of a renal carcinoma.  
A. Hypervascular carcinoma of the upper pole of the left kidney.



B. Occlusion of the renal artery with Gelfoam particles and stainless steel coils.



tients treated by embolization alone, only two patients are alive at 14 months and 56 months. Of the 26 patients, four had locally advanced disease and 22 had extensive metastatic disease including liver metastases. Of the 22 patients with metastases, only one is alive, with a median survival of four months.

**Liver:** The transcatheter management of hepatic neoplasms, whether primary or secondary, includes arterial infusion (HAI) and occlusion.<sup>21,22</sup> The failure to respond to HAI and/or the absence of effective drugs are frequently followed by peripheral embolization alone or in combination with central occlusion of the hepatic artery. It should be stressed that, if a hepatic neoplasm is localized to a resectable segment, then surgery is still the treatment of choice.

**Hepatic Infusion:** Administration of Mitomycin C, 15mg/M<sup>2</sup> over a two to 24 hour period, and Floxuridine (5-FUDR), 100 mg/M<sup>2</sup> per day for a five-day continuous infusion, is the present protocol for hepatic metastases from colorectal carcinoma. Adriamycin, 60 to 75 mg/M<sup>2</sup> given over the course of five days in three pulses of 20 to 25 mg/M<sup>2</sup> each, is added to the above for a primary hepatocellular neoplasm or metastases from an unknown primary neoplasm. For metastases from breast carcinoma, soft tissue sarcoma, and melanoma, Cis-diamminedichloroplatinum (CDDP), 120 mg/M<sup>2</sup>, is infused over two hours. The treatment course is repeated every four to six weeks depending upon the patient's tolerance.

**Results, HAI:** Of the patients with metastatic colorectal carcinoma treated by HAI, 55% achieved partial response and 12% achieved complete response. The median survival rate from the time of initiation of HAI as a first line therapy in comparison with the use of the intravenous route did not significantly improve. However, with HAI as a second line of therapy following failure of intravenously administered chemotherapy, there was a significant improvement in survival, 14 months as compared to seven months.<sup>21</sup> Breast carcinoma metastases to the liver had a 30% response rate with CDDP.

**Hepatic Occlusion:** Primary and secondary hepatic neoplasms receive their blood supply almost exclusively from the hepatic artery (90%) although the normal liver parenchyma is supplied by the hepatic artery (30%) and the portal vein (70%).

Devascularization of a hepatic neoplasm can be achieved percutaneously by combined peripheral embolization of particulate material, Gelfoam or Ivalon and central occlusion with stainless steel coils. This method is used (1) in patients with unresectable primary hepatic neoplasms, (2) preoperatively to facilitate surgery of a resectable hypervascular neoplasm, (3) in metastatic neoplasms that fail to respond to chemotherapy, (4) as the initial management of certain metastases usually refractory to chemotherapy, and (5) to control pain and/or hemorrhage of a hepatic neoplasm.<sup>23</sup>

**Bone:** Transcatheter management of primary and secondary bone tumors includes both arterial infusion and occlusion. Intra-arterial infusion of chemotherapeutic agents has been used primarily in malignant bone tumors, and arterial occlusion has been effective in giant cell tumors and aneurysmal bone cysts. Bone pain has been controlled by occlusion of metastatic renal cell carcinoma.<sup>24</sup>

**Infusion:** In 14 patients with osteosarcoma, nine (64%) had a significant response to CDDP.<sup>25</sup> In seven other patients with a variety of malignant bone tumors, including chondrosarcoma, malignant fibrohistiocytoma, etc., were treated with CDDP with similar response. The complications included skin reaction with edema and discoloration. Severe myelosuppression and transient hypertension also occurred. The manifestation of neurologic, auditory and nephrogenic toxicity of CDDP did not occur in this series.

**Occlusion:** Benign bone tumors, including giant cell tumors and aneurysmal bone cysts were treated by arterial occlusion. These tumors involved predominately the innominate bone, sacrum, and distal lumbar spine. The response (60%) was manifested by pain relief, decrease in tumor size, and calcification in the rim of the tumor (Figures 3A, B, C). One patient has remained asymptomatic for four years.<sup>26</sup>

Adverse reactions occurred in three of the 10 patients with a foot drop occurring in two and transient numbness in one. These patients experienced pain that was different from that experienced prior to embolization and persisted for a few days.

#### **Pelvic Neoplasms**

Tumors in the pelvis, including carcinomas of the bladder, prostate, cervix and ovary, and recurrent colon carcinoma have benefited by intra-



arterial therapy via bilateral internal iliac artery infusion.

*Bladder:* Carcinoma of the bladder, when confined to the bladder, is treated by radiation therapy followed by cystectomy in six weeks with a 50% five-year survival rate. In the presence of disease beyond the bladder, radiation therapy

alone will yield a 16% five-year survival rate. In diffuse metastases, or following failure of the previously described management, chemotherapy (CDDP, Adriamycin, and cyclophosphamide) is administered systemically. This regime is more effective against the metastases, especially pulmonary, than against the primary transitional cell carcinoma. To palliate the pain and hemorrhage of the recurrent or residual carcinoma of the bladder, bilateral internal iliac artery infusion was attempted in 18 patients.<sup>27</sup>

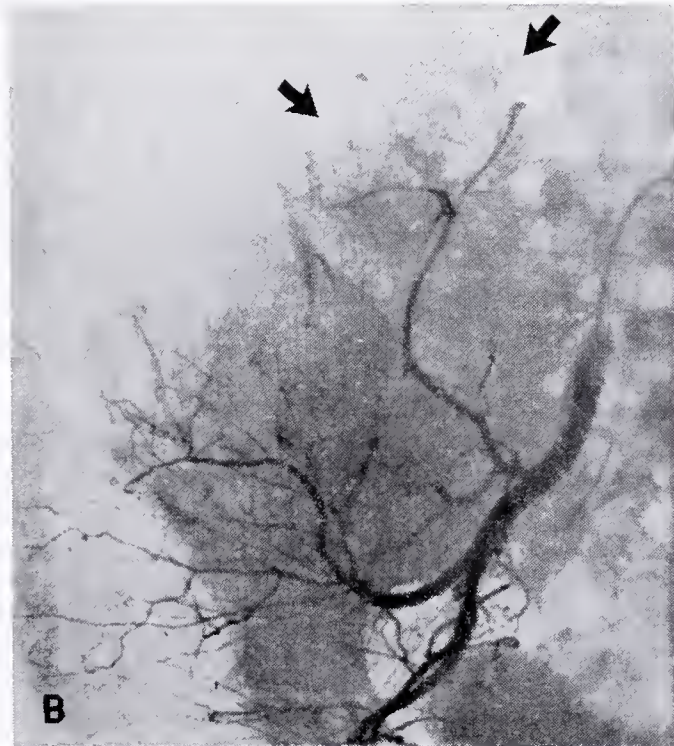
*Technique:* Each internal iliac artery is catheterized with a 5 French or 6.5 French catheter, usually from the ipsilateral femoral artery. On occasion, placement is better accomplished from each contralateral femoral artery. Each catheter is connected to a separate pump to permit equivalent delivery of the chemotherapeutic agents. CDDP is infused at a rate of 80 to 150 mg/M<sup>2</sup>, usually 120 mg/M<sup>2</sup>, over a 24-hour period divided between the two catheters. Mannitol and hydration are also administered to prevent possible renal and neurotoxicity.

*Results:* Patients with recurrent disease of the bladder after the failure of radiation therapy and/or surgery who were admitted to MDAH because of pain and hematuria, usually survived approximately three months. Eighteen patients



Figure 3.

Transcatheter management of benign bone tumor.  
A. Aneurysmal bone cyst involving the right ilium extending into the abdomen.



B. Right internal iliac arteriogram.



C. One year after occlusion there is evidence of healing with a 20% reduction of size and a calcific rim.



were treated by intra-arterial infusion. Pain relief was accomplished in 12 of the 15 patients. Six patients succumbed to the disease, although 12 are still alive as long as two years after the initiation of treatment. Two patients who failed to respond to CDDP, one with signet ring adenocarcinoma of the bladder and the other with transitional cell carcinoma, did respond dramatically to a combined regimen of intra-arterial five Fluorouracil and intravenous Mitomycin C, and Adriamycin infusion.

**Conclusion:** The treatment procedures discussed in this paper comprise but a portion of the interventional activity now pursued by us at M. D. Anderson Hospital. Our approach is limited by the availability of effective chemotherapeutic agents for intra-arterial infusion.

The practice of transcatheter occlusion of the vascular supply, which creates an ischemic neoplasm, presents an interesting concept which will stimulate further experimental and clinical investigation.

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# A Productive History and Physical Examination In the Prevention and Early Detection of Cancer

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## Abstract

Family physicians must continually deal with the problem of an adequate evaluation of pre-symptomatic conditions on periodic health examinations. The medico-scientific community has produced little evidence that most traditional screening has improved morbidity and mortality statistics. Listening to and examining the patient in a concerned, humanistic manner with a high index of suspicion will delineate most cancer as well as its precursors. Enough must be known about risk factors, pathophysiology, and available therapy to be able to recommend the most efficient and productive plan for continued monitoring or for further work-up where indicated. Health screening techniques may be performed by non-physicians, but they must supplement, not replace, the doctor-patient relationship if compliance is to be expected.

## Introduction

A productive history and physical examination in the prevention and early detection of cancer is the title of this paper. Most detection maneuvers which are customarily employed in the history and physical examination are included because they have been helpful diagnostic adjuncts in the adult, symptomatic patient. It does not necessarily follow that these procedures are useful in the detection of presymptomatic disease or in the delineation of risk status. Clinical diagnosis is a curious mixture of thoughtful search and decerebrate routine which may eventually extinguish the preventive fervor of all but the most compulsive clinician by a seemingly endless series of uninformative system reviews and "negative" rectal examinations and abdominal palpations. The routine more often than not is extended to include a host of irrelevant multiphasic screen-

ing reports, chest x-ray interpretations and blood and urine studies. Productive is defined in part as: "producing or tending to produce increase in quantity, quality or value." It is derived from the Latin prefix, *pro*, which means forward; and the verb, *ducere*, which means to lead. If we are going to lead our patients forward toward better health by the use of the history and physical examination, we will have to redefine that which is usual or "routine" and include that which is productive in prevention and early detection. I would like to quote Hippocrates, who wrote the following over 2300 years ago: "It is disgraceful in every art, and more especially in medicine, after much trouble, much display, and much talk, to do no good after all."

*Section I.* Family physicians must continually deal with the problem of an adequate evaluation of presymptomatic conditions on periodic health examinations.

Patients expect their family physicians to be able to perform a complete, annual examination quickly and at low cost. They expect their physician to be able to assure them that they have no serious health problems and then to furnish them with a guarantee that they won't acquire future illness of any serious consequence. They have a further unrealistic expectation that despite not complying with their physician's advice concerning risk factors (i.e. obesity, smoking and alcohol) they will somehow escape the penalties for their self-indulgence. They are confident in their own minds if they do become ill that their physician and modern medical science will perform perhaps expensive and painful, but nevertheless curative procedures on any ailment that may besiege them. This misconception has been promoted by a paternalistic medical profession which has done an excellent job of convincing the public that we are magicians who can work miracles with modern medicines, incredible surgery and space age technology. The physician must abdicate his current role of deciding what is best for his patients; and involve them by providing them with accurate and meaningful health related information in order that they might make decisions

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concerning their self-imposed risk related diseases and conditions.

It is extremely difficult to convince our patients that they should give up pleasures of the moment for health advantages two, three or four decades from now. Most are oriented toward: getting through the work week, the "thank God it's Friday" syndrome, paying the house mortgage or the car payment, and trying to save enough money to enjoy a new vacation spot. Unfortunately, most physicians have the same type of here and now orientation which they have learned through past and present medical education in virtually all medical institutions around the world. They are taught curative or episodic medicine which is oriented toward handling immediate difficulties of health with very little thought toward future health planning. He in turn teaches his patients to expect this type of care and not to expect health care maintenance. Physicians and patients must be re-educated to formulate goals that will be productive of health rather than waiting for a disease or disabling condition to occur. A plan must be devised to change our medical education system from the undergraduate medical student through resident training and extending to Continuing Medical Education for education of the practicing physician. The plan will have to produce a genuine understanding of productive health care measures that can be inserted into a private setting as well as a large group practice, and it must produce an attitudinal change in the medical profession if our patients are to be expected to comply with new recommendations.

The physician practicing in a private office must concern himself with the lack of payment for preventive care by the providers of the traditional financing of disease care, which in the United States is mainly through the federal government, the private insurance industry and out of pocket payments. A busy practitioner in private practice is not likely to donate a great deal of his time toward preventive medicine, patient education and other procedures necessary for health planning and maintenance, if in fact he is having a difficult time scheduling his patients with acute problems from whom he earns most of his income. If patients become aware of the value of health maintenance procedures in preventing subsequent medical expenses as well as suffering, loss of income and possibly early

death, they would, in many instances, invest in themselves and their health with out of pocket payments. The federal government and the insurance industry must be convinced of the economic advantage that accrues when diseases and disabling conditions are prevented rather than paying for attempted cures and continuing maintenance. They will have to assist the poor, the elderly and others unable or unwilling to help themselves.

*Section II.* The medico-scientific community has produced little evidence that traditional screening has improved morbidity and mortality statistics.

The pap smear program was instituted more than twenty years ago, utilizing physicians in private practice as well as some cancer detection centers. Although there is statistical evidence to indicate that cervical cancer may have been decreasing prior to the introduction of the program, it perhaps represents the only mass screening program for which there is data to support a true reduction in the mortality and morbidity of cancer (cervical). The *annual* pap smear examination has become a household word in the United States, and it has been touted as an undeniably essential procedure for every woman from puberty to old age. Confidence in this examination as well as the medical profession, volunteer health organizations, nurses and others who have promoted the *annual* pap smear will undoubtedly be shaken by the new recommendations released by the American Cancer Society in mid-March. The advised decrease in the frequency of pap smears will be interpreted by the layman, as well as some in the health care industry, as an indication that the examination is no longer important. Many people will feel that they have been duped by the all-knowing physicians who have recommended the more expensive annual examination rather than the triennial examination, and I would expect patient compliance to decrease, with an increase in cervical cancer morbidity and subsequent mortality in ten to twenty years. The other recommendations of a less frequent interval or discontinuance of procedures completely will augment the patients' poor attitude toward health maintenance and screening, unless he is approached in a different manner than has been used in the past. I believe that very little will be gained by an

attempt at yet another mass public education program, and that the job of patient education will fall to the personal physician in a private office setting. Obviously, physician education must precede patient education as is indicated in the preceding section.

All educational efforts must be accompanied by methods of conducting the much needed research which would stress studies of validity, frequency, acceptability and influence on health status of many of the maneuvers now in question. Again, the private practitioner will have to be reimbursed for time and effort spent by him and his office personnel in data collection.

*Section III.* Listening to and examining the patient in a concerned, humanistic manner, with a high index of suspicion will delineate most cancer as well as its precursors.

A well done history will provide most diagnoses in medicine. Prospective medicine depends entirely on the medical history with the exception of two laboratory tests, blood sugar and cholesterol, and two physical examination procedures, blood pressure and weight. Statistics indicate that several years of life can often be added to an individual's life expectancy if he will rectify some of the risk factors elicited by a history and abbreviated physical examination and laboratory procedures alone. A more complete physical examination can be performed by an experienced examiner in less than fifteen minutes in most instances, and if one adds to this some very simple and inexpensive procedures such as pap smear, hemoccult slides, urinalysis and blood count, virtually all malignancies which are responsive to prevention and early diagnosis will be evident.

If one examines the summary table (see Table I) of the recommended protocol prepared with special assistance from Dr. David Eddy and recently released by the American Cancer Society, he will find only two procedures, mammography and sigmoidoscopy, are regularly recommended on asymptomatic patients that may not be performed in some office settings. If sigmoidoscopy and endometrial biopsy are available, which they are in many primary care offices, then the entire protocol can be done for high risk as well as the general population with the exception of mammography. The addition of the procedures recommended in the American Cancer Society's report should not burden the physician or patient

since most are available, and they are already incorporated in most examinations at a more frequent interval.

*Section IV.* Enough must be known about risk-factors, pathophysiology and available therapy to be able to recommend the most efficient and productive plan for continued monitoring or for further work-up where indicated.

The physician who has assumed the position of assisting a patient in caring for his total health picture must be able to support him in making informed, reasonable decisions concerning his present and future health. He (physician) must know the pathophysiology of cancer, the risk-factors involved with cancer and other diseases, and the usual treatment or monitoring procedures that are performed. He (physician) must further, however, be able to apply this knowledge to the individual patient and the locality in which he and the patient reside. He must know the facilities that are available; as well as the approximate cost, effort and discomfort necessary to utilize them. He must be able to counsel the patient concerning the significance of test results, and he must advise him if further work-up, consultation, or therapy is indicated. One or more locations should be suggested, and he should be able to give the patient an unbiased and informed opinion concerning the alternatives to the suggested plan.

The individual plan that the private physician in an established doctor-patient relationship develops, may differ considerably from the screening or monitoring plans that are devised to accommodate masses of people being screened in a screening clinic, cancer detection clinic, or general clinic manned by multiple specialists. The unique position that a family physician occupies is in the knowledge of his patients' total circumstance including individual and family attitudes toward health, financial resources, available transportation, etc. It is obvious that an elderly patient with little financial resource and no transportation would be ill advised to formulate a health maintenance plan that required follow-up testing at a far distant medical center and at great expense. If a health maintenance or therapy plan must be devised that is complicated, it is necessary to have a doctor-patient relationship which the patient can trust and have available for fur-



ther direction and interpretation of test results, consultations, etc. There have been many studies which indicate that patient compliance is best when the patient is directed by a physician or his designate with whom the patient has an established relationship, and that the compliance is lowest in dehumanized, impersonal situations where the patient can not relate to one or two individuals.

*Section V.* Health screening techniques may be performed by non-physicians but they must supplement, not replace, the doctor-patient relationship if compliance is to be expected.

The patient derives no benefit from a positive diagnostic study or positive risk-factor evaluation if he does not follow the suggested consultation, behavioral modification, or other recommendations that are made. The same is true of continued health monitoring. If a patient is given a "clean bill of health" after a thorough examination by a competent physician or health maintenance facility, but fails to come back for future examinations or fails in interim self-examinations, he can not expect to continue in good health indefinitely. If the health maintenance plan involves behavioral modifications such as a change in eating, drinking, smoking and/or exercise

**Table 1.**

### Summary

The Society recommends to the public the following protocol for the early detection of cancer in asymptomatic persons.

Test or Procedure	Sex	Population		New Recommendation		Previous Recommendation
		Age	Risk	Frequency		
Chest x-ray		— not recommended —				high risk person annually <sup>1</sup>
Sputum cytology		— not recommended —				not recommended
Sigmoidoscopy	M&F	over 50		every 3-5 years <sup>2</sup>		persons over 40 annually
Stool guaiac slide test	M&F	over 50		every year		persons over 40 annually
Digital rectal examination*	M&F	over 40		every year		same
Pap test	F	20-65 <sup>3</sup>		every 3 years <sup>4</sup>		annual
Pelvic examination	F	20-40		every 3 years		annual
		over 40		every year		same
Endometrial tissue sample	F	at menopause	high risk <sup>5</sup>	at menopause		same
Breast self-examination	F	over 20		every month		same
Breast physical examination	F	20-40		every 3 years		annual
		over 40		every year		same
Mammography	F	between 35-40		baseline		no policy
		under 50		consult personal physician		policy related only to BCDDP
		over 50		every year		
Health counseling and cancer checkup <sup>6</sup>	M&F	over 20		every 3 years		“periodic”
	M&F	over 40		every year		

<sup>1</sup>Persons over 40 who smoke or are exposed to other lung carcinogens.

<sup>2</sup>After two initial negative examinations a year apart.

<sup>3</sup>Pap test should also be done on women under 20 who are sexually active.

<sup>4</sup>After two initial Pap tests done a year apart are negative. High risk women should have more frequent Pap tests.

<sup>5</sup>History of infertility, obesity, failure of ovulation, abnormal uterine bleeding, or estrogen therapy.

<sup>6</sup>To include examination for cancers of the thyroid, testicles, prostate, ovaries, lymph nodes, oral region, and skin.

habits he will have to be constantly encouraged and the indicated behavior re-enforced frequently. The family physician again is in an ideal position because he sees his patient for episodic or curative visits on the average of two and one-half to four times per year. If the patient has a large family that visits the family physician there may be more opportunities to re-enforce the health care plan and behavioral modification.

The non-medical, health professional can perform most of the maneuvers that are necessary to adequately evaluate the asymptomatic patient on periodic health screening examinations. There will be very little difference in patient compliance with the resultant health plan if the physician remains clearly the director of the health care team with whom the patient can relate at desired and/or appropriate intervals. Utilizing secretarial personnel for record keeping and statistic recording and clinical personnel for the performance of many tests, follow-up procedures, and behavioral modification reinforcement as well as acting as an additional contact person, can free the physician's involvement in health maintenance partially but not completely. He must be available to teach new developments to patients as well as others in the health maintenance team, and he must take the ultimate responsibility for the quality as well as the quantity of work done. If well planned and properly delegated preventive protocols are implemented which are compatible with local resources and constraints, the private practicing physician involved should have more time, improve the quality of care that he is able to deliver, and he should not suffer a great financial deficit.

### Conclusion

A well directed history, a well planned physical examination and a few readily available office procedures will identify most risk-factors and precursors as well as provide an early diagnosis of most remediable cancer. Such identification and diagnoses are of no value if patient compliance with a well thought out plan for monitoring or for further work-up is not followed by the patient. Highest rates of compliance are obtained when a patient has an established doctor-patient relationship on a continuing basis. A concerted effort in professional education for the practicing physician as well as in our medical schools and residency programs must be launched to make the

physician of first contact aware of the importance of prevention and early diagnosis in his practice. Funding must be made available through private resources, insurance companies, federal agencies and other third party payors to reimburse the private practitioner for time spent in preventive medicine which includes patient education. This would allow the development of many thousands of cancer screening clinics in individual physicians' offices where careful data collection would be possible if it were properly instituted and funded at the outset of such a program. This plan of preventive medicine and early diagnosis in the private sector has the greatest opportunity to accomplish the ultimate goal which is lowering morbidity and mortality rates of cancer as well as most other disorders that cause untimely death or severe permanent disability in a cost effective manner.

A productive history and physical examination then has been defined in this paper as a modification of the traditional, medical school taught history and physical examination which is usually done for symptomatic conditions. It is actually a process which may be best provided in a private practitioner's office that produces information that allows the patient to move toward the two main goals of periodic health evaluation: the prevention of specific disease and the promotion of health.

The importance of prevention may be illustrated by a favorite anecdote:

It relates the story of a physician trying to explain the dilemmas of the modern practice of medicine:

"You know," he said, "sometimes it feels like this. There I am standing by the shore of a swiftly flowing river and I hear the cry of a drowning man. So I jump into the river, put my arms around him, pull him to shore and apply artificial respiration. Just when he begins to breathe, there is another cry for help. So I jump into the river, reach him, pull him to shore, apply artificial respiration, and then just as he begins to breathe, another cry for help. So back into the river again, reaching, pulling, applying, breathing and then another yell. Again and again, without end, goes the sequence. You know, I am so busy jumping in, pulling them to shore, applying artificial respiration, that I have *no* time to see who the hell is upstream pushing them all in."



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# Attitudes and the Drama Triangle in Geriatric Medicine

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### Abstract

Medical care of the elderly patient is influenced by the physician's frame of reference, or bias. Based on our society's standards of worth, the value placed on the elderly is low. The "Drama Triangle" concept includes roles of "Persecutor," "Rescuer," and "Victim." The physician may see an aged patient as the "Persecutor" and himself as the "Victim." The physician's reaction as a "Victim" often results in inappropriate medical care. By updating one's knowledge and understanding of aging and disease process in the aged, one can help prevent feeling victimized.

Mr. Z, an 81-year-old white patient being followed by the Hospital Based Home Care Program, was admitted on 12/6 by a physician on the team. The patient's history included arteriosclerotic heart disease with myocardial infarction approximately eight months prior and three hospitalizations for congestive heart failure in the preceeding four months. Other diagnoses include diabetes mellitus (non insulin dependent), neurogenic bladder secondary to neurosyphilis (treated) and anemia.

The admitting physician and the medical intern obtained a history of chills, nausea, persistent vomiting with epigastric pain, precordial pain, tightness across the anterior chest, shortness of breath, and feeling of being smothered. They noted that the patient appeared ashen and in some distress. (The patient arrived on the ward at 6 p.m.) The medical resident (R #1) wrote on the chart (10 p.m.) . . . "2-3 days ago developed mild anorexia, vomiting (phlegm) x 1-2, myalgia, one chill, no fever. No other complaints other than stable chronic problems. Says he had good bowel movement yesterday." He observed that the patient was alert, oriented, and in no distress. He noted that the electrocardiogram showed "no change from a previous study, with normal sinus rhythm and intraventricular conduction defect" and an acute abdomen x-ray series showed increased colon gas, no air fluid levels, and much feces. He felt that the patient had fecal impaction

and probable viral illness by history. His plan was to check for fluid electrolyte disorder, continue maintenance management, give enemas, and transfer to Geriatric Service (which he assumed incorrectly had followed the patient). The patient was provided oxygen by ventimask, ordered bed rest, and a liquid diet. Appropriate laboratory tests were ordered for a patient who had known coronary artery disease and an acute illness. The resident (R #1) on 12/7 noted that the electrolytes and blood urea nitrogen were normal. He did not note the abnormal readings of SGOT, LDH, and CPK at 310, 544, and 806 respectively, nor that the electrocardiogram showed changes suggestive of an acute myocardial infarction. The patient was transferred the same day (12/7).

The Family Practice Resident (R #2) on the Geriatric Service was unhappy that a patient with fecal impaction was transferred to his care. He continued the same medical regimen. On 12/8, the patient's history, laboratory studies, and care were reviewed by the Attending Geriatric staff internist. The resident then ordered the CPK, SGOT, LDH, and electrocardiogram to be repeated for 12/8 and 12/9.

On 12/9, the patient was transferred to the Coronary Care Stepdown Unit because of a smothering sensation, nausea (but no chest pain), new ECG findings and enzymes changes, as follows:

	12/6	12/8	12/9
SGOT	310	1500	3000
LDH	544	3000	3900
CPK	806	578	605

The different pieces of information taken separately made a definitive diagnosis difficult. The patient's history of heart trouble and the elevated enzymes should have been alerting signs. The resident, R #1, did not note the enzyme levels, nor the subtle changes on the electrocardiogram. The resident, R #2, only reacted appropriately after this was brought to his attention by the Attending.

The patient's age and his having multiple chronic problems most probably did influence the less diligent search for other problems. R #1 appeared to have predetermined the extent of

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care he would provide instead of being more open-minded. Reflexly appropriate tests were ordered but no attention was paid to the results. R #2 reacted to the transfer as inappropriate and this influenced the extent of care he gave.

"Agism"<sup>1</sup> does exist in medical care given to the elderly. This is not usually due to a conscious effort by medical practitioners to discriminate against the elderly, but is based more on unconscious attitudes. The busy physician with limited time can get good information if the patient has a single problem of an acute nature. The elderly sick will tend to have multiple and more chronic problems. The effort required to get a clear history is greater, particularly if the patient is hard of hearing. Also, the physical attractiveness of the patient tends to influence the amount of time spent with the patient.

Physicians are molded by parental attitudes and by society's value system. Wants, likes, and dislikes are developed. Criteria are compiled to define good and bad. Attitudes, beliefs, and expectations are established. We all enter into situations with a frame of reference which reflects past experiences, data/information bank, and determines expectations. There is no intrinsic wrong in entering a physician-patient situation with a frame of reference. This human quality is an important factor that separates a physician from a diagnostic machine.

A frame of reference or bias (usually thought of in negative terms) may create an internal "crooked score keeper" who stacks up statistics to maintain and promulgate that frame of reference. In short, someone who believes that all red-heads are fiery-tempered would pay special attention to occasions when red-heads show their temper and ignore the times when they are as calm as others. In a similar way, biased data is gathered on the elderly. If one links "old age" with "senility" he could possibly miss (misdiagnose) a reversible brain syndrome and not appropriately treat the underlying cause. With improper treatment, an irreversible brain syndrome can result. This is like a self-fulfilling prophecy and is hard to disprove.

The clues which indicate bias regarding the elderly include: 1) the derogatory or pessimistic remarks made about the elderly sick, 2) the rapidity in concluding that medical care is not needed, and 3) the descriptive terms, or nicknames, given to the elderly.

Becker, et al,<sup>2</sup> have noted that two major patient types are "crocks" and "interesting cases." The interesting cases are usually patients who can give a lucid history, have evident pathology, and have some potential for improvement through medical management. The "crocks" are usually seen without "disease," from whom the medical student can learn little or nothing, and who may actually cause the medical student distress, frustration, and embarrassment. Mumford<sup>3</sup> has noted the appearance of two other types — "gomers" and "turkeys;" these are hospitalized patients who the young physician feels should not have been admitted since their illness is too minor to warrant his spending time on them.

Everyday, powerful forces direct us to view the elderly in unfavorable light. We live in a youth-oriented and achievement-oriented society. We are future-oriented and our values are geared towards youthfulness. On all these counts the elderly do not stand a chance. Care providers tend to have the YAVIS syndrome<sup>4</sup> — i.e., the young, attractive, verbal, intelligent, and successful (well-paying) are favored when care is given.

### Drama Triangle

The concept of the Drama (Karpman) Triangle<sup>5</sup> will illustrate the dynamics that could be in play. The Drama Triangle has three positions, "Persecutor," "Rescuer," and "Victim."

A physician, although ostensibly a "rescuer," may feel victimized if he has to provide care for an elderly patient who he sees as having "no real need" for medical care. The patient, through no choice or fault of his own, is viewed as the "persecutor." Since being a "victim" is an uncomfortable one, there is a reaction.

One reaction is to be angry and lash back, i.e., "persecute." This can be in the form of doing painful procedures (usually rationalized as teaching the patient not to return with unreasonable complaints in the future). The patient becomes the "victim" with this switch of position. Another reaction is to avoid contact with the patient. This is easily accomplished by cursory examination and going through ritualistic behavior such as ordering routine laboratory tests without clear indications or goals.

Another reaction of a "victim" may be to seek someone to "rescue" him. Thus, he may try to get a "consultant" who will take over. Unfortunately, if the goals are not clear, this can lead to

further disappointment and feeling more victimized when the consultant will help manage the patient instead of taking over the care. The situation gets deeper as the consultant is viewed as a further source of "persecution," i.e., one "who will not do his job." This can lead to further disruptive and nonproductive action such as making disparaging remarks about the consultant.

In short, the emotional involvement when a physician takes on the role of "victim" can prevent proper appraisal of the patient and lead to disapproval by one's professional colleagues and peers (or supervisor when this applies) or a malpractice suit. When this happens, one becomes a real victim of his own doing.

*How to avoid taking on the role of "Victim" when treating the elderly patient:*

1. Update one's knowledge of the elderly person — the change in physiological functions that occur with age and the modified signs and symptoms of disease process in the elderly. Distinguish between disease process and normal aging. In the past, information provided in medical school about the elderly has been negligible. A great deal of myth has been passed on, inside and outside of medical training, as facts.
2. Be aware of one's biased views — "good and bad," of the elderly and do not prejudge. Sympathy and antipathy, unlike empathy, can lead to inappropriate care.
3. One may need to have more patience and time to appropriately evaluate an elderly patient. For example, he may not hear well and fail to understand questions, but does not tell you because of embarrassment or fear that

these are signs of going crazy or becoming senile.

4. Be aware of the possibility of entering into the Drama Triangle. The professional rescuer with proper knowledge and application of skills can avoid being involved in the Drama Triangle. One may need to acquire some extra skills to deal with the elderly patient. For example, polish up on listening skill.

While all of the above can help, the most important and most difficult task is to change one's attitude and frame of reference in regard to the elderly. Chappel and Schnoll<sup>6</sup> in reference to the treatment of chemically dependent patients, have raised the issue of how attitudes that enhance the quality of treatment can be developed during medical and postgraduate medical education. They believe that modifying attitudes is far more difficult than transmitting information or developing technical skills. These remarks are equally applicable in regard to the treatment of the elderly.

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# ELECTROCARDIOGRAM

# OF THE MONTH



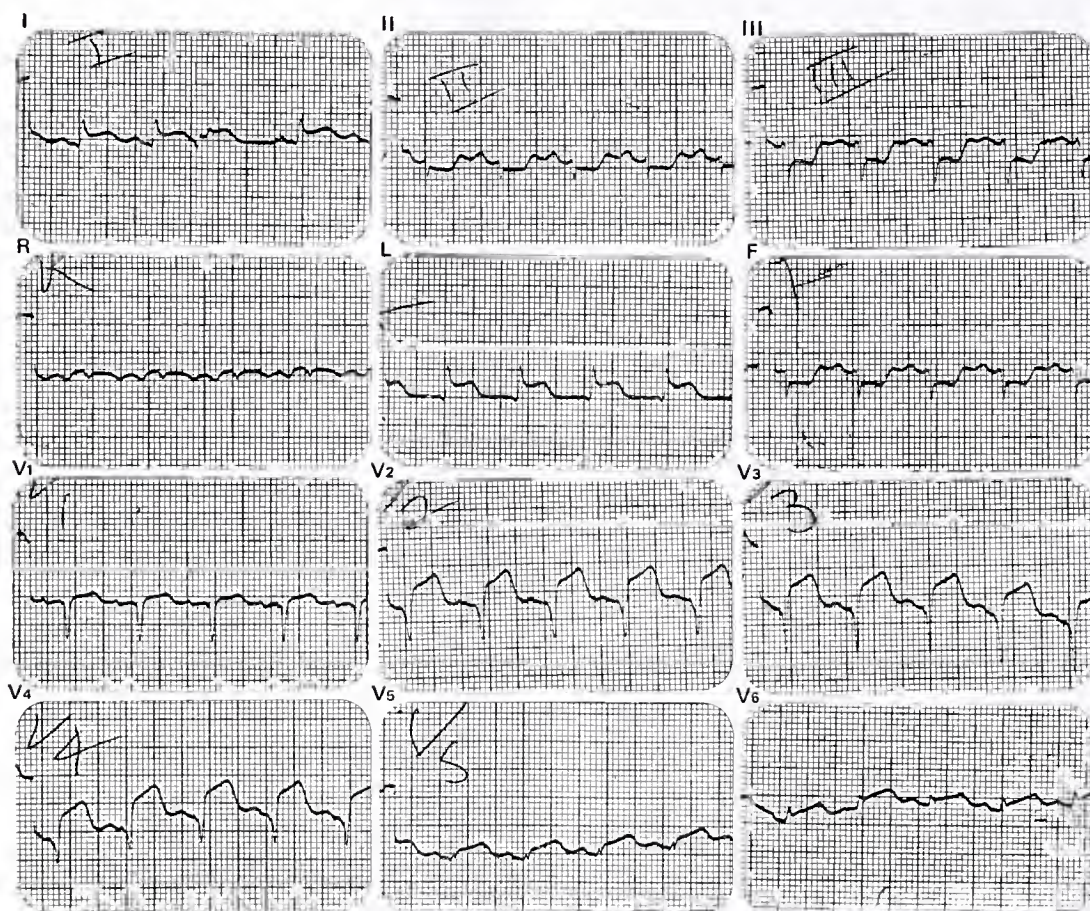
The Department of Cardiology, University of Arkansas College of Medicine

(See Answer on Page 512)

**HISTORY:** L. P. is a 68-year-old woman who presented to the hospital because of severe substernal chest pain lasting two hours and associated with diaphoresis and nausea. The patient on physical examination was found to be hypotensive and to be mentating poorly. An  $S_3$  gallop and rales were both present. Shown below is her ECG.

Which of the following remarks are most likely true and which are most likely false?

1. The patient has pericarditis and/or myocarditis.
2. A temporary pacemaker is strongly indicated.
3. A pulmonary artery pressure monitoring catheter would yield information of use in therapy.
4. Prophylactic use of lidocaine should be strongly considered.



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# Office Orthopaedics

## Stenosing Tenosynovitis (Dequervain's Disease, Trigger Thumb, and Trigger Finger)

H. Austin Grimes, M.D.\*

In deQuervain's disease the diagnosis is easily made by Finkelstein's test (Figure 1). This disease may be acute trauma, recurrent trauma or some underlying collagen disease. In the first six weeks, non-operative treatment consists of splinting the thumb in Burnham's splint, and injection of the tendon sheath with 0.5 to 1.0 ml of steroid and local anesthetic. The splint should remain on most of the succeeding two or three weeks.

Surgery consists of unroofing the retinaculum which is restraining the abductor pollicis longus and extensor pollicis brevis tendon sheaths at the level of swelling and tenderness of the wrist (Figure 2). Often two separate compartments are present for the abductor pollicis longus and extensor pollicis brevis (Figure 3). In these cases, both retinaculae must be opened to insure ade-

quate release of tendon motion. After this is done, the patient should actively flex and extend the thumb under direct vision to insure full excursion of the respective tendons. We have found that venous block anesthesia with a double tourniquet is satisfactory for anesthesia and ischemia. The incision should be transverse to adequately expose the involved tendon sheaths and to visualize and protect the sensory branch of the radial nerve. Apply a pressure dressing for a couple of days

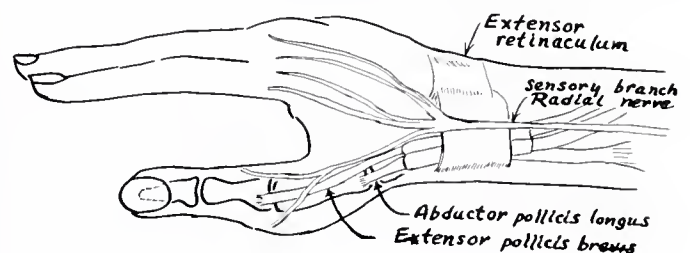


FIG. 2

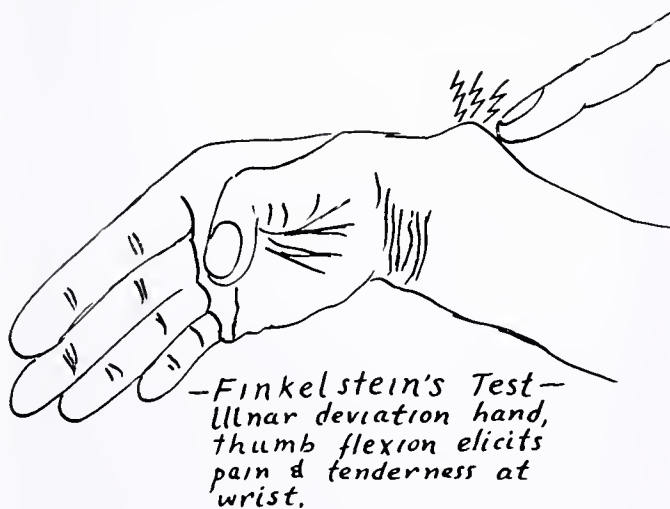
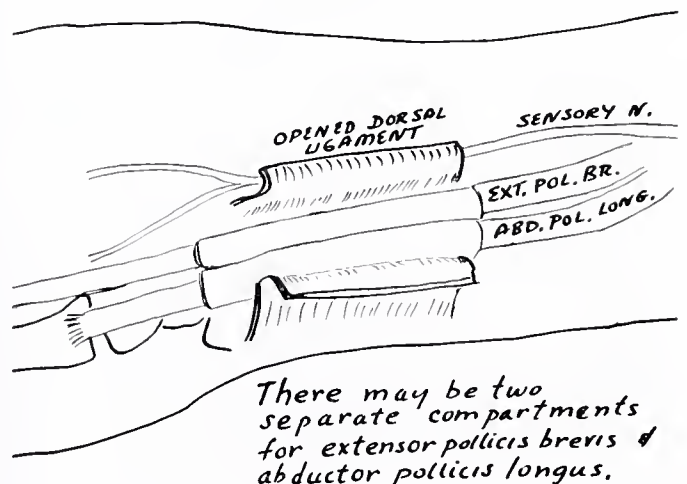


FIG. 1



There may be two separate compartments for extensor pollicis brevis & abductor pollicis longus.

FIG. 3

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and encourage the patient to actively use the thumb as much as tolerated.

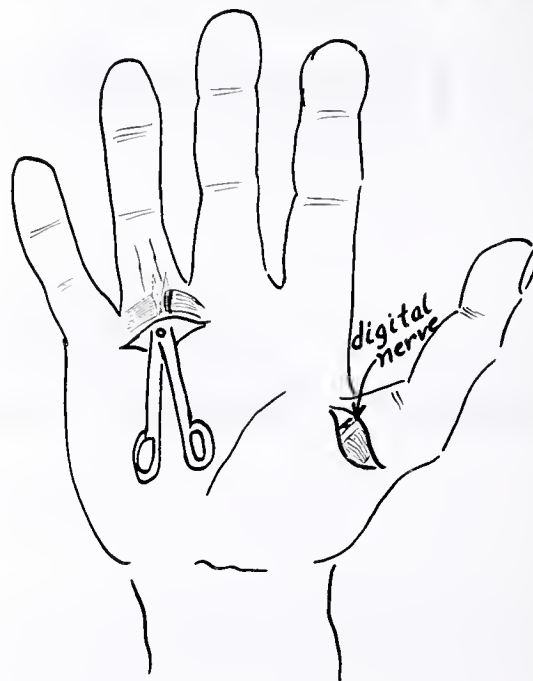
Trigger thumb occurs at the proximal phalangeal metacarpal junction on the flexor surface and gives a painful and frustrating inability to actively extend the thumb (Figure 4).

Injection of this area is not done with much success, and the danger of striking the volar branch of the digital nerve to the thumb does exist. Therefore, surgical release of the restricting pulley is done utilizing the venous block anesthetic approach. Active use of the thumb is encouraged and sutures are usually removed from the transverse skin incision in eight to ten days.

In trigger fingers the restricting retinaculum is on the flexor surface at the level of the distal metacarpal head and involves the tendon itself. The swelling of the tendon causes the locking to occur, and may be on either side of the theca. Complete release of the theca relieves the triggering, and smooth motion should occur immediately. If not, then insure that the entire theca has been released. Oftentimes this necessitates a longitudinal section of the theca approximately 1/8 inch wide being removed.

Again, active motion of the involved finger is

encouraged immediately, and sutures are removed at the appropriate interval.



*Trigger Finger and  
Trigger Thumb incisions  
NOTE: PROTECT DIGITAL NERVE  
OF THUMB!*

FIG. 4





## EDITORIAL

# Another Vista on Coronary Disease

Alfred Kahn, Jr., M.D.

Most physicians who are not in limited specialties are overwhelmed by the mass of medical publications — some are paid for by the physicians and others are sent to him totally unrequested. The “bottom line” of this situation is that practicing physicians have a hard time selecting the significant articles from the great volume of chaff.

One very significant group of articles has been published by *Circulation* — as a supplementary issue entitled, “Proceedings of the Workshop on Platelet-active Drugs in the Secondary Prevention of Cardiovascular Events,” with guest editors, E. Braunwald, W. T. Friedewald, and C. D. Furberg. (*Circulation*, Part II, Vol. 62, No. 6, Dec., 1980).

The most interesting article in this group is by A. Maseri, S. Chierchia, and A. L'Abbate under the title of “Pathogenetic Mechanisms Underlying the Clinical Events Associated with Atherosclerotic Heart Disease.” The thrust of the article is to try and give a working understanding of how acute vascular events occur in arteries with underlying chronic disease — arterio-sclerosis — of varying intensity. They were particularly intrigued by Prinzmetal's syndrome of angina pectoris at rest. They feel that too much focus has been given to the vascular stricture in the ischemic diseases — and not enough to other causes. Prinzmetal's Syndrome with pain occurring at rest tends to focus the pain syndrome away from just a mechanical obstruction in the coronary artery to other factors as spasm, etc. Prinzmetal's Syndrome may “represent only the tip of the iceberg. Most frequently, even in the same patient, acute transient myocardial ischemia may result from different causes in the presence of critical athero-sclerotic lesions as well as in their absence.” They go on to relate how transient ischemia may be manifest as arrhythmia or pump failure.

They further relate that angina decubitus is not due to increased demands on the heart — this has been disproved by duct measurement of cardiac function and by measurement of body activity. They state that an increase in cardiac function at the beginning of an episode of angina pectoris does not prove the increased work precipitated the attack. Actually, it is said that many patients with nocturnal angina pectoris have a fair exercise and what Maseri, et al, are saying is that it is a myth to believe that angina pectoris is just the result of increased body demand. As further proof, they cite the fact that monitoring of coronary sinus oxygen shows a drop in oxygen saturation before the EKG shows ST Segment changes and before signs of left ventricular malfunction.

Maseri captions one of the short chapters in this article “Coronary Stenosis May Be Both a Bystander and The Culprit” — in other words, it is possible to have coronary artery ischemia “without air of myocardial demand and well below the maximal coronary flow reserve imposed by fixed lesions.” They cite the fact in an experimental preparation with an 85% reduction in the size of the lumen of a coronary vessel — the vessel could under proper stimulation permit a 300% increase in blood flow. Maseri states that coronary artery spasm in both normal and diseased coronary vessels can be detected by angiographic means and this is seen in association with myocardial ischemia whether angina pain is present or not. EKG changes appear with this as S-T Segment elevation of short duration when a large coronary artery is in spasm; both exertional angina and angina at rest may be associated with coronary artery vasospasm and elevated S-T Segments.

Maseri, et al, relates that life threatening



arrhythmias may occur with variant angina — and they respond to vasodilator treatment not anti-rhythmic drugs; ventricular fibrillation, a known cause of sudden death, may appear with coronary vasospasm.

Myocardial infarction, the authors postulate, may be the result of long lasting coronary vasospasm. Some of these vessels open up after infarction. All of these facts have led Maseri and his collaborators to study the causes of coronary artery vasospasm; they believe that local vascular hypersensitivity and vasoconstrictive trigger mechanisms cause the vasospasm. Apparently during the course of the athero-sclerotic process, the arterial wall becomes hypersensitive — stenosis is definitely not a necessary co-factor in the occurrence of spasm. Factors mentioned were hypoxia, local cholesterol deposition, endothelial cushions and decreased prostacyclin manufacture or release. Calcium gradients in the smooth muscle are also said to play a role.

The trigger mechanism can be a dynamic balance — oversensitive arteries and normal stimuli or slightly abnormal, slightly oversensitive arter-

ies and potent trigger mechanism. Maseri cites some trigger mechanisms as alcohol, food, cold drinks, exertion, etc.; there is a possibility of vessel narrowing due to an imbalance between thromboxane A and prostacyclin; two opposing chemicals. Spasm once initiated may lead to vessel damage and even thrombus formation.

In concluding their articles, Maseri, et al, state that “stenosis may not be the cause of symptoms.” They feel that the cause of coronary symptoms may be spasm. This is a fascinating article and it should be carefully studied to integrate the facts presented here with our current major involvement in coronary arteriography to find stenotic lesions in coronary arteries. Most American medical centers have active coronary artery bypass surgery programs. Neither Maseri’s position nor the prevalent American position of bypassing obstruction are necessarily in conflict but the total integration of these two seemingly different stands is not entirely clear. In any event, statistics certainly buttress the value of dealing surgically with certain stenotic lesions from both a symptomatic and life extending point of view.



## *“From Other Years”*

(From the University of Arkansas for Medical Sciences Library, History of Medicine/Archives Division.)

*Journal of the State Medical Society of Arkansas*  
2(1):22-23 July, 1891

Editorial Notes

The *Arkansas Gazette* of July 13th says: “The season when a community’s health can be endangered by the miasmatic aromas that arise from dirty streets and filthy alleys, is approaching. Attention has been frequently called to the plague spots prevalent in Little Rock. The alley running through the block from Fifth to Sixth streets, between Main and Louisiana, is in need of attention. There are other places in the city that also demand a sanitary overhauling.” The above is incorrect in at least two particulars. In the first place the season when a community’s health can be endangered is *already* here; and secondly, it might have come nearer telling the true condition of affairs by stating that there is not a place in the

whole city that does not demand a sanitary overhauling. The commonest fatal mistake for communities and those in authority to commit is to put off cleaning up until the diseases resulting from filth are already developed. The time for *prevention* of disease is long before it makes its appearance, so that when the hot weather comes with alternating spells that are dry and wet, causing decomposition and poisoning influences, it may find nothing to work on. To stir up the filth in the midst of sickness that it causes is little less than homicide.

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*Journal of the State Medical Society of Arkansas*  
2(2):66 August, 1891

Editorial Notes

The medical corps of the Arkansas State Guards consists, according to the record in the Assistant’s Adjutant General’s office, of one physician, who is surgeon general, with the rank of colonel. It is

understood that his duties are not so onerous as to seriously interfere with his private practice.

The friendly relations which exist between the physicians and pharmacists in Arkansas are attracting considerable attention in other localities. As long as doctors' signs are clustered about the portals of drug-stores and the druggists' cards are printed on the back of the physician's prescription blanks there is no use to talk about antagonism between the two professions, except, of course, in meeting, and on such occasions it is only talk.

\* \* \* \*

*Journal of the State Medical Society of Arkansas*  
2(4):177-178      October, 1891

The Southeast Arkansas Medical Association

From an item published in the *Arkansas Gazette*, THE JOURNAL learned that a meeting of the physicians was recently called for organizing a society having the above name.

On account of the small number attending the first convention an adjournment was had until a larger number could be induced to attend.

This is a move in an important and proper direction, and although the first attempt was not a complete success it is encouraging to be able to state that the physicians of that section have at last *moved*. The first to start are not always the first to reach the goal and it may be that these doctors in southeast Arkansas who have been hampered by so many difficulties, will, when once organized, rapidly gain on and even pass some of the older societies.

The Southwest Arkansas Medical Association

Issued the usual neat and complete programme for the meeting to be held at Arkadelphia, October 5th and 6th.

The programme announced papers of unusual interest and the meeting must have been a pleasant gathering of the members to hear and discuss them.

The JOURNAL regrets that the full proceedings have not been received in time for insertion in this issue.

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## MEDICINE IN THE NEWS



### THE MONTH IN WASHINGTON

Prime targets for the cost-cutting knives of the new Administration and Congress would appear to be the government's gargantuan entitlement programs such as Social Security, Medicare and Medicaid which account for 95 percent of the \$258 billion budget of the Health and Human Services (HHS) Department. The HHS budget is approximately one-third of the Federal budget.

The Reagan Administration's health budget — a reworking of the Carter budget — is expected shortly and most likely will contain sweeping changes, particularly in the area of Medicare and Medicaid.

HHS Secretary Richard S. Schweiker pointed out during his confirmation hearings that he would have to work closely with Congress as the

entitlement programs are not within the Administration's control.

In Congress, Reps. Richard Gephardt (D.-Mo.) and David Stockman (R.-Mich.) have reintroduced their pro-competition national health plan that would end Federal health planning and remove many of the tax deductions for private health insurance. Stockman has been appointed Director of the Office of Management and Budget.

The House and Senate have about completed the selection of committee members, chairmanships, and subcommittee assignments as the lawmakers buckled down for a long and arduous session.

In addition to whatever health legislation that may be proposed by the Reagan Administration, the Congress also faces the task of deciding the



fate of a number of major health programs that expire this year. These programs include Health Planning, HMO's, and Health Manpower.

Certainly much of the activity of the new Congress will be centered on the size of the health budget with conservatives determined to make large cuts and liberals digging in to resist the inroads.

\* \* \* \*

Former Pennsylvania Senator Schweiker breezed through the Senate Finance Committee confirmation hearings for his appointment as HHS Secretary. In addition to his concern with the entitlement programs that consume so much of his budget he said that "more emphasis must be placed on eliminating fraud, waste, and abuse. It will be my intention to give strong support to the Inspector General's Office in this regard and to work closely with the General Accounting Office as well."

As one example, Schweiker said that he intends to work with the Justice Department to attack fraud and abuse of the Medicaid program.

In his prepared statement Schweiker said, "I believe the new Secretary must work closely with the new Administration and the Congress to curb inflation, which has so aptly been termed the cruelest tax of all on the poor and the elderly citizens who rely so heavily on HHS programs."

Schweiker also said that the Reagan Administration probably will not support a comprehensive national health insurance program but that its approach to the problem might be to combine catastrophic coverage and a program to fill in the gaps for the 10 percent of the population who have no coverage.

He said that he was against any federal regulation approach to hospital cost containment, but that it was his intention to resurrect a voluntary effort to reduce increasing costs of medical care. He also said that he would reinforce and not threaten these programs with antitrust suits. He agreed with Senator David L. Boren (D-Okla.) that a bill to set up pilot programs for states to experiment with cost-saving programs would be a good approach. He said he emphasizes the competitive approach to reducing hospital costs.

Schweiker also said that a lot can be done in home health care delivery, especially for the elderly, and he would look at reimbursement procedures to encourage the reinvestment of resources

in lesser costing health care as an alternative to putting elderly in nursing homes.

Freshman Senator Steven D. Symms (R-Id.) asked Schweiker about PSRO's pointing out that the AMA House of Delegates had recently opposed them after originally supporting them. Schweiker said that PSRO's would be at the top of the list of programs for reevaluation. He said he had made no final judgment, but that preliminary figures indicating that PSRO's are spending more money than they are saving are discouraging.

The response to criticism of the Food and Drug Administration by newly elected Senator Charles E. Grassley (R-Ia.), Schweiker said that he had led the fight to oppose the banning of saccharine and that the Delaney Clause needed to be revised.

There was mostly praise and good wishes from his colleagues in the Senate Finance Committee, but there was some good humored poking from the new minority Democratic Senators Russell B. Long of Louisiana and Daniel Patrick Moynihan of New York.

Long, the outgoing Chairman of the Finance Committee, compared Schweiker to a Gulliver going into the land of the Lilliputians. He wondered if Schweiker would be able to control this government island.

Schweiker responded that he didn't think the wool would be pulled over his eyes and that he was going to work with Congress.

Senator Moynihan questioned Schweiker on whether he was going to follow the Republican platform's pledge to make a wholesale transfer of Federal welfare programs to state governments and asked if Schweiker intended to repeal the Medicaid program or to transfer the Social Security System to state governments.

Schweiker said that he did not consider the Social Security System to be welfare and that his first priority as incoming HHS Secretary would be to maintain the integrity of the system and to solve its short and long range problems.

In response to a question by Senator Max Baucus (D-Mont.) Schweiker said he would "like to be remembered as the HHS Secretary who put preventive medicine at the top of the health care agenda." He stated he would especially support research in this area, and that he believes in an emphasis on keeping people well to avoid disease. "I'm a two mile a day jogger," he said. "I

intend to continue my efforts in health promotion and disease prevention within the department, emphasizing cost effective, preventive health care strategies."

\* \* \* \*

Former President Carter sent Congress a \$73.5 billion budget for the government's civilian health programs next fiscal year, up from the \$64.5 billion this year. The outgoing budget stands to be worked over by the new Reagan Administration.

There's little chance the overall totals will differ much, since the bulk of the Carter budget's increase comes from inexorable rises in Medicare — from \$38.6 billion to \$45.3 billion — and Medicaid — from \$15.6 billion to \$17.2 billion.

The Public Health Service received a miserly \$8.7 billion, up 5.9 percent, for its discretionary health programs, several of which are being eyed by the Reagan Administration for extinction or deep slashes.

The Carter budget mentions national health insurance only in passing, saying that it continues to support enactment of the Carter plan "when budget resources are available." At the same time, the budget assumes Congressional enactment of the Child Health Assurance Program (CHAP) with a \$50 million request. For the first time in three years, the budget does not assume Congressional passage of the Hospital Cost Containment plan that was defeated in the last Congress and that is stoutly opposed by the new Administration.

Health programs put down for sizeable increases include Community Health Centers, National Health Service Corps, Genetic Screening, Communicable Disease Center's health promotion programs, some of the National Institutes for Health (NIH) and the National Institute on Alcohol Abuse and Alcoholism.

The major cutback eyed by the outgoing Administration was, as usual, in medical education through elimination of the \$72 million for capitation grants and \$73 million for other health professions education programs, including \$48 million for nursing education aid.

The "lame duck" budget says that HHS will continue to encourage hospitals to keep expenditures from rising more than 14 percent this year with "strong efforts to monitor hospital compliance." The budget seeks legislative authority

from Congress to link Medicare-Medicaid reimbursement to hospitals' compliance with local planning recommendations.

All of the institutes for Federal medical research programs were allotted some increases, but the total \$255 million gain is only 7.1 percent of the NIH's \$3.8 billion budget. With an increase of \$46 million, the National Cancer Institute would go over the \$1 billion mark for the first time. But the increase was the smallest percentage increase (4.6 percent) of all the institutes. Institutes allowed the largest gains were Environmental Health Sciences, Eye, Aging and Neurological.

The Carter budget proposes no change in funding for the Professional Standards Review Organization (PSRO) program, but predicts that PSRO's will save the government \$244 million through reducing the number of Medicare hospital days and reducing inappropriate medical care. The PSRO program is rumored to be vulnerable under the Reagan Administration.

The \$33 million increase, or 36 percent, proposed for the National Health Service Corps would enable the Corps to swell its strength to 3,570 people next year. HHS Secretary Schweiker was critical of the Corps expansion at Congressional hearings last year.

Health Maintenance Organizations (HMO's) would remain at the same level as last year with the loan and loan guarantee fund recapitalized with \$17 million plus \$48 million for grants for development of new HMO's and expansion of existing ones.

The Health Planning budget was stand-pat at \$147 million, possibly because the Reagan Administration is known to be hostile to the program. The budget proposes that a voluntary incentive grant program of \$13 million be set up to channel discretionary funding through the state health planning agencies to health systems agencies. In order to get the money, the HSA's would have to establish special cost containment programs for reducing beds or construction.

\* \* \* \*

A panel of economists has told the Senate Budget Committee that Social Security benefits must be cut in order to balance the Federal budget.

Former Federal Reserve Board Chairman Arthur Burns said Social Security beneficiaries



are a "privileged class" because benefits have increased faster than wages in recent years and are tax exempt.

Barry Bosworth, former Director of the Council on Wage and Price Stability, said "you have got to get into programs such as Social Security and cut them."

The Reagan Administration has promised to seek ways to cut back on the size of the Social Security program.

\* \* \* \*

The nursing home industry, which has compared itself to David fighting Goliath in its court fight against proposed new government regulations, came out victorious thanks to the new Administration.

The regulations were a lengthy list of guarantees for patients such as privacy, access to records, visiting hours, etc., that nursing homes claimed would cost them \$500 million a year to obey.

The proposals were issued as one of the final acts of former HHS Secretary Patricia Harris. They were swiftly withdrawn the day after the inauguration of President Reagan. The Department said "the potential impact on both providers and consumers of health care needs to be assessed further."

The notice of withdrawal said that Harris improperly ignored a congressional order that HHS consult a General Accounting Office study of the impact of the regulations before making a final decision. But HHS officials said the real reason was the new HHS Secretary Schweiker opposed the regulations.

\* \* \* \*

The decision by former HHS Secretary Harris not to recharter the Graduate Medical Education National Advisory Committee (GMENAC) was a setback for supporters who wanted to make the Committee a permanent advisory group.

The committee last year issued a lengthy, controversial report urging reductions in medical school enrollments.

The AMA opposed making GMENAC permanent. An AMA task force warned that this would make it more likely that GMENAC recommendations would be readily transformed into Federal regulations.

Harris' move leaves the option open to new HHS Secretary Schweiker to proceed on GMENAC's status. The House-passed Health Manpower bill last year contained a provision cementing GMENAC's status, but the Senate bill was silent on the subject.

\* \* \* \*



**THINGS**

**TO**

**COME**



**May 8-10**

"The General Practice of Anesthesiology." The Arkansas Society of Anesthesiologists, Inc., and The Department of Anesthesiology, U.A.M.S. Red Apple Inn, Heber Springs. 5½ hours Category I. No fee for ASA members; \$40 for non-members. For further information, contact Jan Cole at (501) 661-5261.

**June 12-13**

"Pediatrics for the Practitioner" — The 15th Annual Kenneth C. Haltalin Pediatrics Seminar, to be held June 12-13, 1981, at the University of Texas Health Science Center at Dallas.

**August 26-29**

"Sixth Annual Urologic Oncology Seminar." The University of Texas System Cancer Center, M. D. Anderson Hospital and Tumor Institute. Shamrock Hilton Hotel. 21 Credit Hours Category 1. Fee — \$150.

For additional information contact: Dr. Douglas E. Johnson, Head, Department of Urology and Professor of Urology, M. D. Anderson Hospital, 6723 Bertner, Houston, Texas 77030.

# keeping up

## Category 1 Continuing Medical Education Programs Available in Arkansas

### **PULMONARY PATHOLOGY**

Presented by Glen F. Baker, M.D., *May 2, 8:30 a.m. to 12:00 noon; May 3, 9:00 a.m. to 12:00 noon*, Red Apple Inn, Heber Springs. Five and one-half hours Category I credit. Sponsored by UAMS.

### **TUMOR MARKERS: NEW OPPORTUNITIES AND NEW VALUES**

Presented by Dr. James W. Geyer, *May 6, 4:00 p.m.*, St. Vincent Infirmary, Room S1119, Little Rock. One hour Category I credit. No fee.

### **THE GENERAL PRACTICE OF ANESTHESIOLOGY**

Presented by Richard Clark, M.D., Arkansas Society of Anesthesiologists, *May 8, 5:00 p.m. to 7:00 p.m.; May 9, 8:00 a.m. to 12:15 p.m.; May 10, 8:30 a.m. to 12:00 noon*, Red Apple Inn, Heber

Springs. Five and one-half hours Category I credit. No fee for ASA members; \$20 for CRNA's; \$40 for others. Sponsored by UAMS.

### **PEDIATRIC UPDATE**

Presented by Robert Fiser, M.D., *May 20, 11:30 a.m. to 4:00 p.m.; May 21, 8:00 a.m. to 12:30 p.m.; May 22, 7:30 a.m. to 1:00 p.m.*, Indian Rock Resort, Fairfield Bay. Eleven hours Category I credit. Fee \$150. Sponsored by UAMS.

### **THIRD ANNUAL FAMILY PRACTICE INTENSIVE REVIEW SEMINAR**

Dr. Ben N. Saltzman, Program Director, *June 19 through 21, 8:30 a.m. to 5:00 p.m.* each day, Education II Building, UAMSC. Twenty-two and one-half hours Category I credit. Fee \$115.

### **RECURRING EDUCATION PROGRAMS**

Unless otherwise indicated, programs are for one to two hours of Category I credit.

#### **EL DORADO — AHEC**

*Pathology Conference*, second Tuesday, 12:30 p.m. to 1:30 p.m., AHEC.

*Chest Conference*, alternate Wednesdays, 12:30 p.m. to 1:30 p.m., Warner Brown Hospital.

#### **FAYETTEVILLE — AHEC-NW**

*Medicine Teaching Conference*, each Saturday, 7:30 a.m. to 8:30 a.m., Washington Regional Medical Center.

*Surgical Teaching Conference*, May 7, 1:00 p.m., "Evaluation of the Trauma Patient;" June 4, 1:00 p.m., "Shock," AHEC Clinic.

*Pediatric Teaching Conference*, May 12, 12:30 p.m., "Diarrhea, Workup;" June 9, 12:30 p.m., "Sudden Infant Death Syndrome," Washington Regional Medical Center.

*OB-GYN Conference*, May 19, 1:00 p.m., "Pelvic Inflammatory Disease;" June 16, 1:00 p.m., "Normal Labor," AHEC-NW Conference Room.

*AHEC Medicine Conference*, 1:00 p.m., AHEC Clinic, May 1, "The Anemia Workup;" May 21, "Fluid and Electrolyte Problems;" May 26, "Coagulation Mechanisms;" June 5, "Efficacy of the Newer Antibiotics;" June 18, "Nephrotoxic Drugs;" June 23, "Rational Use of Drugs."

#### **FAYETTEVILLE — VA MEDICAL CENTER**

*Radiology Conference*, May 7, 21 and June 4, 18, 1:00 p.m., Conference Room.

*Pathology Conference*, May 10 and June 16, 3:00 p.m., Conference Room.

*Mortality Conference*, May 14 and June 11, 3:00 p.m., Conference Room.

*PEER EXCHANGE*, May: "Cardiology;" June: "Infectious Diseases." (For further information, contact VAMC.)

#### **FORT SMITH — AHEC**

*Tumor Conference*, each Tuesday, 12:00 noon, Fourth Floor Conference Room, Sparks Regional Medical Center.

#### **JONESBORO — AHEC-NE**

*Interesting Cases*, second and fourth Tuesday, 12:00 noon, Dietary Conference Room, St. Bernard's Regional Medical Center.

*Tumor Conference*, third Tuesday, 12:00 noon, Dietary Conference Room, St. Bernard's Regional Medical Center.

*Medical Lecture Series*, each Friday, 12:00 noon, Dietary Conference Room, St. Bernard's Regional Medical Center.

As organizations accredited for continuing medical education by the Liaison Committee on Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.



### LITTLE ROCK — BAPTIST MEDICAL CENTER

*Pulmonary Care Conference*, each Tuesday, 12:00 noon to 1:00 p.m., Conference Room #1.

*Central Arkansas Primary Care Conference*, second Tuesday, 7:00 p.m. to 9:00 p.m., Auditorium.

*Cardiopulmonary Resuscitation Course*, second Wednesday, 6:00 p.m. to midnight, Human Resource Development Area.  
Six hours Category 1 credit.

*GI Roundup*, first and third Wednesday, 12:00 noon to 1:00 p.m., Conference Room #1.

*Emergency Medicine Conference*, May 13, 27, and June 10, 24, 12:30 p.m. to 1:30 p.m., Conference Room #1.

*Morbidity and Mortality Conference*, first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.

*Surgery Conference*, each Thursday except first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.

*Anesthesiology Conference*, third Thursday, 7:00 a.m. to 8:00 a.m., Dining Room #3.

*Case of the Month*, May 14 and June 11, 12:00 noon to 1:00 p.m., Conference Room #1.

### LITTLE ROCK — ST. VINCENT INFIRMARY

*Interhospital GI Problems Conference*, first Monday, 6:00 p.m. to 7:30 p.m., Room E155, Education Wing.

*Pediatric Conference*, first and third Monday, 12:30 p.m. to 1:30 p.m., Room E159, Education Wing.

*Interhospital Urology Grand Rounds*, first Tuesday, 5:30 p.m. to 6:30 p.m., Room E159, Education Wing.

*Peripheral Vascular Disease Conference*, third Tuesday, 6:00 p.m. to 7:00 p.m., Room E159, Education Wing.

*Neuropathology Conference*, third Tuesday, 5:00 p.m. to 6:00 p.m., Room S1169, Laboratory.

*Pulmonary Conference*, first and third Thursday, 12:00 noon to 1:00 p.m., Room E159, Education Wing.

*Cardiology Conference*, second and fourth Thursday, 12:00 noon to 1:00 p.m., Room E155, Education Wing.

### LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

*Internal Medicine Grand Rounds*, each Tuesday, 8:00 a.m. to 9:00 a.m., Education I Auditorium.

*Anesthesiology Complications Conference*, each Tuesday, 7:00 a.m. to 8:00 a.m., Room 2E04, UAMS Hospital.

*Neuroradiology Course*, each Wednesday, 4:00 p.m. to 5:00 p.m., Radiology Conference Room.

*Radiology Continuing Education Lecture Series*, two Wednesdays each month, 6:00 p.m. to 7:30 p.m., Radiology Conference Room.

*Residents Anesthesia Seminars*, each Wednesday and Thursday, 3:30 p.m. to 4:30 p.m., Room 2E04, UAMS Hospital.

*Ophthalmology Problem Case Conference*, each Thursday, 4:00 p.m. to 6:00 p.m., UAMS Eye Clinic.

*Categorical Course in Radiology*, each weekday except Wednesday, 4:15 p.m. to 5:00 p.m., Wednesday, 5:00 p.m. to 5:45 p.m., Radiology Conference Room.



## PERSONAL AND NEWS ITEMS

#### Dr. Taggart

Dr. S. D. Taggart of Benton has moved his office to 1718 Old Hot Springs Highway.

#### Library Speaker

Dr. John F. Guenther of Mountain Home spoke recently to the Friends of the Library on his early medical practice in Baxter County.

#### Russellville Gains Physician

Dr. Ronald Guy, an Internist, has opened his office at 2504 West Main in Russellville.

#### New Office

Dr. G. Doyné Williams, Little Rock, has moved his office to #1 St. Vincent Circle.

#### Cedarstone Appointment

Dr. Joe T. Backus of Little Rock has been appointed Director of Psychiatric Services at Cedarstone Psychiatric Institute.

#### Kiwanis Speaker

Dr. Ray Stahl of Mountain Home was a featured speaker at the Mountain Home Kiwanis Club. The subject of Dr. Stahl's discussion was the current operation of Baxter General Hospital, its patient load, and the need for new facilities, equipment and procedures.

#### Psychosomatic Medicine

Dr. Fred O. Henker, III, Little Rock, was re-elected vice president of the Academy of Psycho-

somatic Medicine at the annual meeting held in November in Miami. In the past, Dr. Henker has served as program chairman and secretary of the Academy and is a member of the executive council.

#### **Keynote Speaker**

Dr. Ralph M. Wynn of Little Rock was the keynote speaker at the Philippine Obstetrical and Gynecological Society meeting at Manila in November.

After the Manila meeting, Dr. Wynn was invited by the president of the Association of Ob/Gyn for the Republic of China to travel to Taipei and speak to Association members at the National Medical College of Taiwan. His presentation in Taipei was "Ultrastructural Pathology of the Placenta."

#### **Dr. Fiser Speaks**

Dr. Robert H. Fiser, Jr., of Little Rock, was elected president-elect of the Southern Society for Pediatric Research at its annual meeting in New Orleans. He will assume the presidency in January 1982.

#### **Dr. Galloway**

Dr. William W. Galloway, Russellville Dermatologist, has moved his office to 1602 West Main.

#### **Staff Chief**

Dr. John R. Williamson has been elected chief of staff at Warner Brown Hospital in El Dorado.

#### **Dr. Rhys Williams**

Dr. Williams of Harrison was among a group of Surgeons to successfully complete the first Recertification Examination of The American Board of Surgeons.

#### **Heber Springs Physician**

Dr. Lewis E. Britton, a Psychiatrist, has opened his office at 1120 West Walnut.

#### **Urologist Joins Hospital**

Dr. David J. Ray has located in Bull Shoals for the practice of medicine.

#### **Dr. Saltzman**

Dr. Ben Saltzman of Little Rock spoke at a recent meeting of the Benton-Bauxite Rotary Club in conjunction with the 76th anniversary of Rotary Club International.



## **NEW MEMBERS**

#### **Dr. Mark J. Malloy**

Dr. Malloy, a native of Crossett, has become a member of the Arkansas County Medical Society.

In 1975, Dr. Malloy was graduated by the University of Arkansas at Fayetteville with a B.A. degree. In 1979, he received his M.D. from the University of Arkansas College of Medicine. His internship was at the University Hospital.

Dr. Malloy is associated with the Stuttgart Medical Clinic. He is a General Practitioner.

#### **Dr. Alice R. Laule**

Dr. Laule, a native of Riverside, California, is a new member of the Boone County Medical Society.

In 1969, Dr. Laule was graduated from the California Lutheran College and in 1976 from the University of Arkansas College of Medicine. She served an internship and Ophthalmology residency at the University of Arkansas College of Medicine.

Dr. Laule has her office at 715 West Sherman in Harrison. Her specialty is Ophthalmology.

#### **Dr. Chu Iy Tan**

The Chicot County Medical Society has accepted Dr. Chu Tan as a member. Dr. Tan was born in China.

Dr. Tan is a graduate of the University of Toronto, Ontario, Canada. In 1978 he was graduated from the University of Toronto Faculty of Medicine. His internship was with St. Joseph's Health Center in Toronto, Ontario.

Before moving to Dermott, Dr. Tan practiced



in Toronto. He now has his office for Family Practice at 604 South Pecan Street.

**Dr. Harold Beasley**

Dr. Harold Beasley, a new member of the Cleburne County Medical Society, was born in Cabot.

Dr. Beasley's pre-med education was at the University of Arkansas, Fayetteville. In 1941, he received his medical degree from the University of Arkansas College of Medicine. After doing an internship at University Hospital, Dr. Beasley served with the United States Air Force from 1942 to 1945. From 1945 to 1949, he was in residency at Washington University Medical Center in St. Louis, Missouri.

Dr. Beasley was in practice one and one-half years in St. Louis and thirty years in Fort Worth, Texas.

A board certified Ophthalmologist, Dr. Beasley is now practicing in Heber Springs. His address is Post Office Box 272.

**Dr. Paul L. McChristian**

Dr. McChristian is a new member of the Faulkner County Medical Society. He was born in Mulberry.

In 1969, Dr. McChristian was granted a B.A. from Hendrix College. His M.D. was received from the University of Arkansas College of Medicine in 1973.

Dr. McChristian served with the United States Navy from 1972 to 1980. His internship and Obstetrical-Gynecological residency were at the Portsmouth Naval Hospital in Virginia. He later served as Chief of Obstetrics and Gynecology at the Naval Hospital, Millington (Memphis), Tennessee.

Dr. McChristian is certified by the American Board of Obstetricians and Gynecologists. His office is at 2519 College Avenue in Conway.

\* \* \* \*

The Garland County Medical Society has two new members:

**Dr. Eugene M. Finan**

Dr. Finan, a native of Little Rock, is a 1972 graduate of the Arkansas State University.

In 1976 Dr. Finan was graduated from the University of Arkansas College of Medicine. His internship was served at the same institution. The first year of Dr. Finan's Obstetrical-Gynecology residency was at the University of Arkansas Col-

lege of Medicine. From 1978 to 1980, he was a resident at the University of South Alabama Affiliated Hospitals in Mobile.

Dr. Finan's office for the practice of Obstetrics-Gynecology is in Suite 311 of the Meyer Building, 505 West Grand, Hot Springs.

**Dr. W. Paul Wise**

Dr. Wise was born in Bryant. He is a graduate of Little Rock Junior College and Ouachita College. He was graduated from the University of Arkansas College of Medicine in 1954.

Dr. Wise's internship was with Arkansas Baptist Hospital. He served with the United States Air Force from 1955 to 1957. From 1957 to 1976, Dr. Wise practiced in Manassas, Virginia. While in Manassas, he served as Chief of Staff at Prince William Hospital. Before moving to Arkansas, he served three years with the United States State Department in the Foreign Service.

Dr. Wise is associated with the Hot Springs Rehabilitation Center for the practice of Physical Medicine and Rehabilitation.

\* \* \* \*

**Dr. Martin L. Key**

The Hot Spring County Medical Society has accepted Dr. Martin Key as a new member. Dr. Key was born in Hamburg, Iowa. From 1961 to 1964, he served with the United States Navy.

Dr. Key's pre-med education was at Drake University at Des Moines and the University of Iowa, Iowa City. He was graduated from the University of Iowa College of Medicine, Iowa City, in 1971. After serving an internship at Spartanburg General Hospital in Spartanburg, South Carolina, Dr. Key practiced in Sainte Genevieve, Missouri, from 1972 to 1976.

In 1977, Dr. Key entered a General Surgery residency at Lincoln Medical Education Foundation in Lincoln, Nebraska.

Dr. Key's specialty is General Surgery. His address is 1001 Schneider Drive in Malvern.

\* \* \* \*

The Jefferson County Medical Society has accepted three new members:

**Dr. Irvin L. Carlton**

Dr. Carlton is a native of Black Oak.

Dr. Carlton served with the United States Air Force for two and one-half years; he was honorably discharged in 1945.

In 1949, Dr. Carlton was graduated with a B.S. by the Arkansas State University in Jonesboro. He received his medical degree from the University of Arkansas College of Medicine in 1953.

After serving an internship at St. Vincent Infirmary, Dr. Carlton did his residency at State Hospital, University of Arkansas Medical Center, and the Veterans Administration Hospital at Fort Roots.

Dr. Carlton practiced in Marianna for two years. He was associated with the Arkansas State Hospital for twenty-one years and spent three years at Fort Roots.

Dr. Carlton practices Psychiatry with the Southeast Arkansas Mental Health Center, 2500 Rike Drive, Pine Bluff.

#### **Dr. Ganesh Kumar**

Dr. Kumar is a native of New Delhi, India.

Dr. Kumar's pre-med education was at Dyal Sine College (Delhi University). In 1973, he was graduated from the Maulana Azad Medical College in New Delhi. He was also a Junior Instructor in Anatomy at Maulana Azad Medical College.

From 1976 to 1980, Dr. Kumar served a residency at John Umstead Hospital in Butner, North Carolina. He later served as staff psychiatrist at the same institution.

Dr. Kumar is now associated with the Southeast Arkansas Mental Health Center, 2500 Rike Drive, in Pine Bluff, specializing in Psychiatry.

#### **Dr. Richard D. Justiss**

A board certified Family Physician, Dr. Justiss practices at 1200 West 42nd in Pine Bluff. He was born in Little Rock.

After obtaining his pre-med education at the University of Arkansas in Fayetteville, Dr. Justiss was graduated by the University of Arkansas College of Medicine in 1977. His internship and residency were with the Fayetteville Area Health Education Center.

\* \* \* \*

#### **Dr. John A. Gillean, III**

Dr. John Gillean has joined the Little River County Medical Society.

Dr. Gillean is a native of DeQueen. His pre-med education was at Hendrix College in Conway. In 1977, he was graduated from the University of Arkansas College of Medicine. Dr. Gillean's internship was at Tulane University Affili-

ated Hospitals. He trained in Internal Medicine at the University of Arkansas College of Medicine. He is an associate member of the American College of Physicians.

Dr. Gillean now practices General Medicine at Ashdown Clinic, Ltd., Second and Main Street in Ashdown.

\* \* \* \*

The Pope County Medical Society has added three members to its roll:

#### **Dr. Ronald E. Guy**

Dr. Guy, a native of Baton Rouge, is a graduate of the Louisiana State University. In 1977 he received his medical degree from the Louisiana State University School of Medicine in New Orleans. His internship and residency were at Charity Hospital of Louisiana at New Orleans.

A board certified Internist, Dr. Guy practices at 2504 West Main Street in Russellville.

#### **Dr. Robert H. May, Jr.**

Dr. May was born in St. Louis, Missouri.

For his pre-med education, Dr. May attended Little Rock University and Ouachita College. In 1968, he was graduated from the University of Arkansas College of Medicine. He served his internship at Bexar County Hospital District in San Antonio, Texas, and his Orthopaedic residency with the Fort Worth Affiliated Hospitals. Before moving to Russellville, Dr. May practiced four years in Harlingen, Texas.

Dr. May is certified by the American Board of Orthopaedic Surgery. His office is located at 305 Skyline Drive in Russellville, for the practice of Orthopaedic Surgery.

#### **Dr. Finley P. Turner, II**

Dr. Turner was born in Fort Smith.

A 1973 graduate of Arkansas Tech, Dr. Turner received his degree from the University of Arkansas College of Medicine in 1977. He served his residency with the AHEC Family Practice program in Fort Smith.

Dr. Turner is a Family Physician. His office is at 809 West Main in Russellville.

\* \* \* \*

#### **Dr. Clark Fincher**

Dr. Fincher, an Internist, has been accepted as a member of the White County Medical Society. He was born in Waldo.

In 1973, Dr. Fincher was granted a B.A. by



## NEW MEMBERS

Hendrix College. He was graduated from the University of Arkansas College of Medicine in 1977. His internship and residency were at the same institution.

Dr. Fincher is associated with Searcy Medical Center at 2900 Hawkins Drive.

### **Dr. Jerry R. Baskerville**

The Yell County Medical Society has accepted Dr. Baskerville as a member. He is a native of Danville.

Dr. Baskerville's pre-med education was at Red Deer College and the University of Alberta, Can-

ada. In 1976, he was graduated by the University of Alberta Faculty of Medicine at Edmonton. His internship was with Edmonton General Hospital.

From 1973 to 1980, Dr. Baskerville served with the Canadian Armed Forces. While in the Forces, he practiced at Cold Lake (Canadian Forces Hospital) from 1977 to 1980. During the same period of time, he worked part-time as emergency room physician at the University of Alberta Hospital.

Dr. Baskerville has his office for the practice of Family Medicine at 1202 Cleveland, Danville.

\* \* \* \*



### **ANSWER—Electrocardiogram of the Month**

**DISCUSSION:** The ECG shows a sinus tachycardia with what may be an ectopic ventricular beat in lead I. The axis is far to the left and left anterior fascicular block is present. Deep and wide Q-waves plus significant ST elevations are present in V<sub>2</sub>-V<sub>4</sub>. ST elevation is present in I, aVL, and V<sub>5</sub>-V<sub>6</sub>; and ST depression is noted in II, III, and aVF. These changes are consistent with acute anterior infarction, as is her clinical presentation. Reciprocal changes are rare in pericarditis and myocarditis as are Q-waves. Less than 5% of patients with isolated LAFB progress to complete AV block. A PA catheter would yield information that would allow one to optimize cardiac output with volume and drug intervention in this patient who may have "cardiogenic shock." Many authors favor the use of prophylactic lidocaine in the setting of acute infarction unassociated with AV block. Though some controversy exists with respect to some of these points, the author feels that 1. and 2. are false while 3. and 4. are true.



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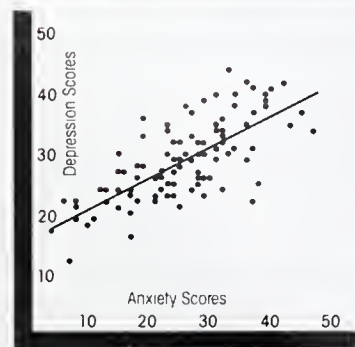
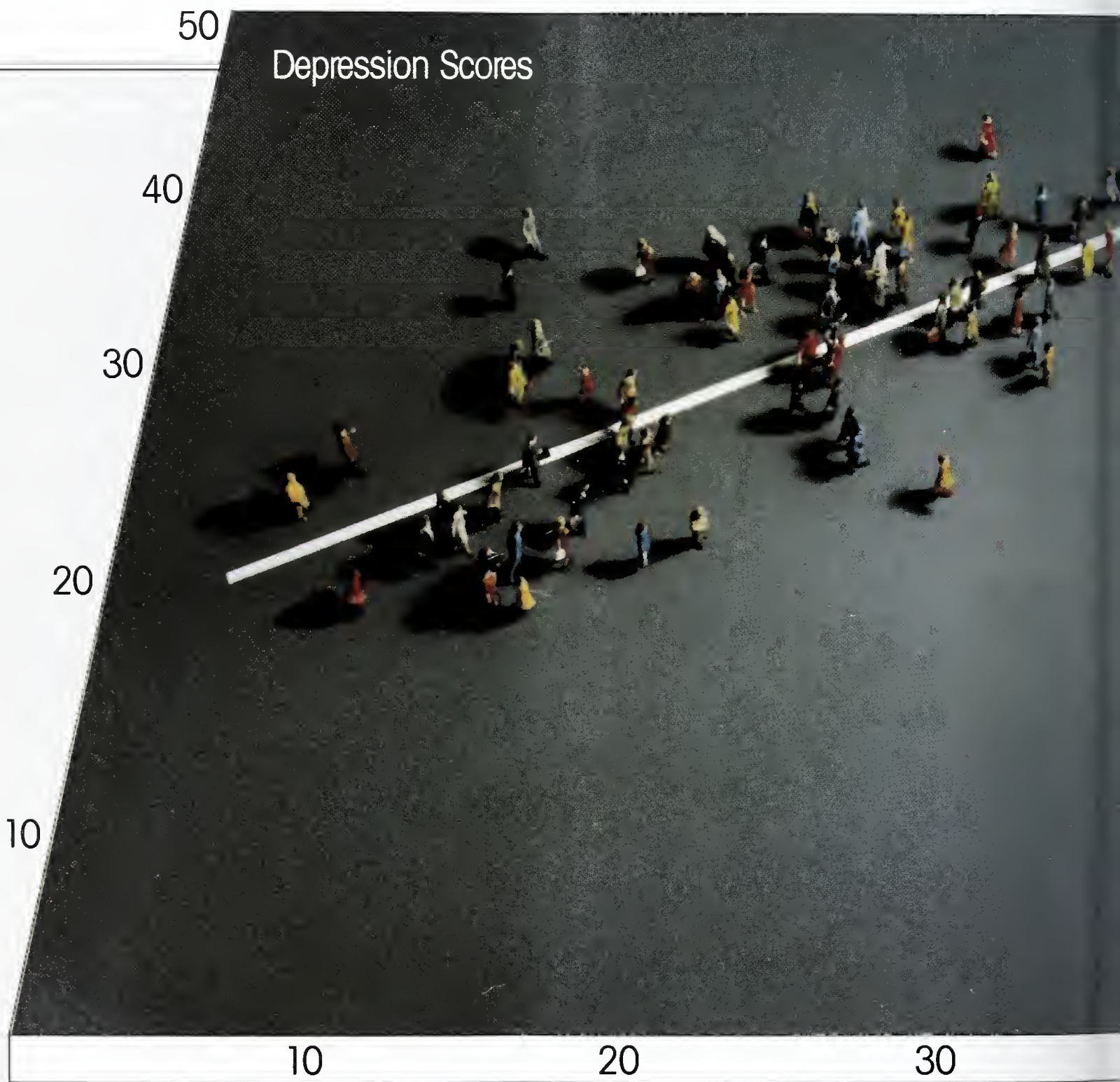


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# FOR THE 7 OF 10 NONPSYCHOTIC



## Clear correlation between anxiety and depression<sup>3</sup>

The above graph illustrates a relationship between anxiety and depression, indicating that patients seldom present with anxiety or depression alone; more often they have both in varying degrees. Data based on a sampling of 100 outpatients (64 male; 36 female) seen at a general psychiatric clinic.

<sup>3</sup>Adapted from Claghorn, J. The anxiety-depression syndrome. *Psychosomatics* 11:438-441, Sept-Oct 1970.

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# Assessment of Beta-Thalassemia in South Arkansas

Wayne G. Elliott, M.D., and Martha K. Pyle, B.S.\*

Assessment of patients for thalassemia has heretofore posed a problem for hematology laboratories. Methods using starch block electrophoresis have been laborious, time consuming, and exacting. Quantitation of hemoglobin A<sub>2</sub> by cellulose acetate has been described but has been unreliable in the average laboratory. The current availability of a column method has resulted in the widespread, easy, and accurate quantitation of hemoglobin A<sub>2</sub>.<sup>\*</sup> The methodology is now within the capability of the routine diagnostic laboratory.

Three hemoglobins may normally be present in the population, A, A<sub>2</sub>, and F, which are composed of four different types of globin chains, Alpha, Beta, Gamma, and Delta. Combinations of these globin chains in pairs give rise to the various hemoglobin forms. Alterations in the production rate of globin chains result in a multiplicity of hemoglobin disorders called *thalassemias*. Globin chain production rate problems must be distinguished from amino acid sequence abnormalities in which the chains are produced at a normal rate but the globin molecules are abnormally constructed, usually by the substitution of a single amino acid. These are termed the *hemoglobinopathies*.<sup>1</sup>

The Beta thalassemias which are characterized by increased amounts of hemoglobin A<sub>2</sub>, compose the vast majority of thalassemias seen in clinical practice. With the advent of an easier determination of its marker hemoglobin, the diagnosis is within the reach of the average practitioner.

Thalassemia is common in populations immigrating from the Mediterranean basin, Asia, and Africa. Because of Arkansas' relative ethnic homogeneity, one would suspect that the disease has little expression in the state except in the Negro population. The purpose of this communication is to describe our experience over a two-year period in the diagnosis of this disorder and to record

what is a surprising incidence in our patient population. (See Chart.)

The primary clinical abnormality alerting one to the diagnosis is the marked diminution of the mean corpuscular hemoglobin volume (MCV) in the presence of mild or no anemia. In none was the electrophoretic pattern of any help except to exclude a hemoglobinopathy. If thalassemia is not specifically considered by requesting an A<sub>2</sub> hemoglobin, the electrophoretic pattern may be misleading.

While detection of a low MCV is an excellent screening method for thalassemia, others<sup>2</sup> have investigated not only those patients with a depressed MCV, but also those with an elevated red blood cell count. These cases were termed "microcytic polycythemia." Most of the patients were indeed found to be thalassemic while the remainder were diagnosed as polycythemia rubra vera and secondary polycythemics with iron deficiency. Dehydration must first be excluded in evaluating the elevated RBC count.

Other methods have been devised to mathematically relate the hemoglobin, RBC, and MCV values in suspected thalassemia by England and Fraser.<sup>3</sup> The calculation is even more specific when elevated platelet counts are used to exclude blood loss depressions of the MCV.<sup>4</sup>

After patients are chosen for further investigation by observation of the blood cell indices, then determination of hemoglobin A<sub>2</sub> and hemoglobin F is required. There will remain a group of patients with a true 'microcytic polycythemia' in which the hemoglobin A<sub>2</sub> and F values are normal and other common causes such as polycythemia vera, secondary polycythemia, and dehydration have been excluded. These residual cases may represent alpha thalassemia, especially in Orientals.<sup>5</sup> Determination of alpha thalassemia requires sophisticated methodology to measure alpha:beta globin chain production rates, methods not within the capability of the usual hematology laboratory.

\*Associated Pathologists' Laboratory, 443 West Oak Street, El Dorado, Arkansas 71730.



Casual examination of the patients' names revealed, by and large, names of predominantly north European derivation. Approximately one-third of the patients were Negro. Only two patients have recognizably Mediterranean or Latin names, therefore exclusion of the condition on the basis of apparent ethnic grouping is unreliable.

The relative mildness or absence of anemia in the disorder creates a reluctance to term the condition a "disease." It often has no manifestations in its minor form other than when recognized as a laboratory abnormality. Recognition is important, however, for three distinct and often noted reasons:

- (1) To prevent needless iron therapy which may induce excessive iron deposition in the body tissues.
- (2) To prevent a fruitless investigation for suspected blood loss anemia (the "Ulysses Syndrome" — a diagnostic wild goose chase set in

motion by a misinterpretation of abnormal laboratory results.)<sup>6</sup>

- (3) To counsel for genetic reasons.

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#### THALASSEMIA MINOR — 24 MONTHS EXPERIENCE — ASSOCIATED PATHOLOGISTS' LABORATORY

	AS	AH	RB	JE	JG	RB	JM	JA	MH	JE	LW
	14	20	26	30	31	39	40	43	48	58	66
	NM	WF	NM	MedM	NM	WF	MedM	MedM	MedF	MedM	NF
Hgb.	13.8	—	12.2	15.0	14.6	10.9	12.0	14.3	11.9	14.0	9.0
RBC	6.97	—	5.36	6.58	6.55	6.17	6.95	6.67	5.16	6.38	4.45
MCV	66	—	60	71	64	64	61	68	71	68	67
Hgb. Electro.	AA	AA	AA	—	AA	AA	AA	AA	AA	AA	AA
SI	—	—	96	—	135	—	—	50	101	—	66
AS	5.6	4.5	8.3	5.6	6.3	5.0	6.0	6.1	4.9	7.1	5.9
(Normal: Less than 3.5%)											
HgbF.		2.1							0.8		9.0

EXPLANATORY NOTE: SI-Serium Iron. RBC-red blood cell count. MCH-Mean corpuscular hemoglobin volume. AH is child of MH. JE 30 is child of JE 58. Med: Mediterranean.



# The Artificial Eye—It Doesn't Have to Hurt

Jack Diner, B.A.\*

Improperly fitted and poorly cared for artificial eyes are the most common causes of chronic exudate, infections, pain and occasional bleeding of the anophthalmic socket.

## Stock Eyes

The problem of improper fit is almost exclusively that of ready made (stock) eyes. Unfortunately anyone with a collection of "suitcase eyes" (as one patient calls them) can go into business in Arkansas, unhampered by any restrictions or law. After contact between the stock eye seller and the patient is made, a "fitting" is made by selecting the eye by, "which one looks best and is closest in color." Need for an adjustment or replacement is only a vague possibility as some of these itinerants only visit sporadically.

## Custom Made Eyes

Only by fabricating a prosthesis that is formed from an impression of the socket can an optimum fit be obtained. Coloring of the iris and tinting of the sclera are done with the patient in attendance to assure a perfect color match. Regularly scheduled visits for any adjustment or cleaning are imperative. (Figure 1-A.)

## Anatomy

A clear understanding of the anatomy of the anophthalmic socket (Figure 1) is basic to appreciating the complications that can occur from an ill-fitting prosthesis.

## Reasons For Complications

The major causes of these complications are voids left between the back of the prosthesis and

the anterior surfaces of orbital tissue (conjunctiva). The warm, moist anophthalmic socket provides a perfect incubator with mucus as a culture medium in which bacteria can proliferate. (Figure 2.)

When an accumulation of exudate exceeds the capacity of the void, pressure increases, causing first discomfort, then pain. The patient will often complain of frontal headache and sinus pain. The pressure will eventually displace the prosthesis and the exudate will erupt, often with a great gush flowing over the patient's face causing much embarrassment.

## Cleaning

Still another cause of these complications is the lack of periodic professional cleaning and

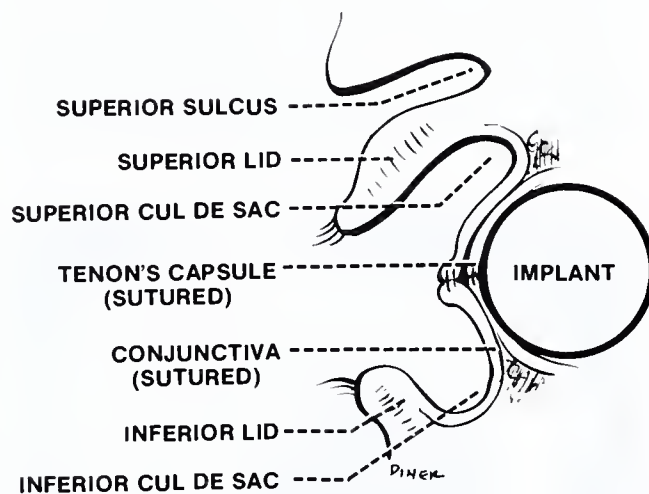


Figure 1.  
Anatomy.

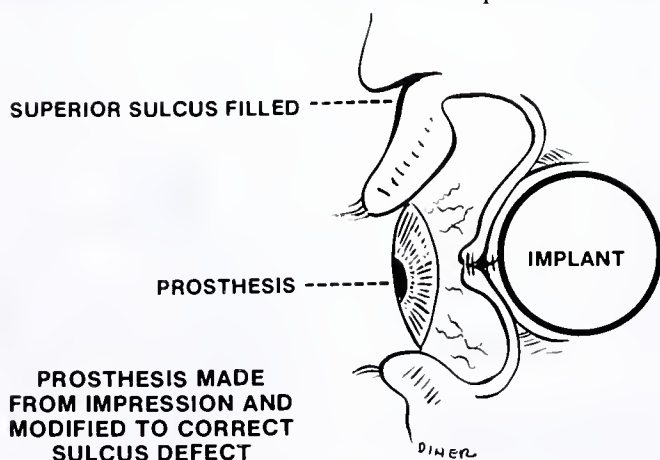


Figure 1-A.  
Custom prosthesis.

\*Medical Illustrator/Sculptor, Department of Otolaryngology, University of Arkansas Medical Sciences Campus, 4301 West Markham, Little Rock, Arkansas 72201.

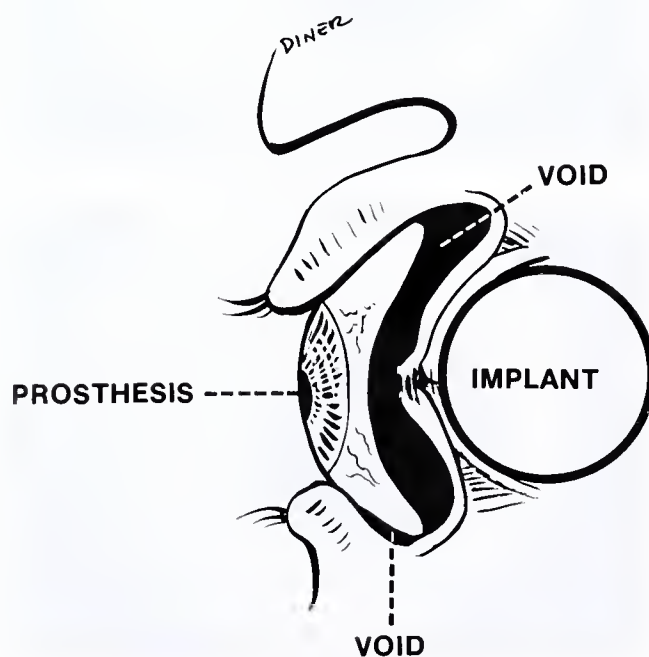


Figure 2.  
Voids behind the prosthesis.



polishing of the prosthesis. A visual comparison between the healthy eye and the artificial one can often reveal this need.

Almost all ocular prostheses today are made of methyl methacrylate which has a high affinity for protein. This and natural salt deposits build up on the surface and cause a hazy appearance. Viewing this condition with only slight magnification will reveal a sharp, rough surface that is obviously the cause of irritation.

If the artificial eye appears dull and/or covered with a haze over the surface, no further examination may be necessary. (Figure 3.) If the patient has not had the prosthesis professionally cleaned for longer than one year, a recommendation should be made for an immediate visit to the ocularist. For those patients whose occupational environment is abnormally dusty (farmers, construction workers, etc.), a more frequent visit may be necessary. The prosthesis in this latter category is also very susceptible to surface scratches that will cause discomfort and must be resurfaced.

**Resurface or Replacement**

Another less frequent cause of difficulty for the wearer is "crazing" of the prosthesis. (Figure

4.) Gross inspection will reveal a crystalline appearance. This pattern is caused by cracks on the surface of the prosthesis. Under magnification these cracks will show knife sharp edges.

This condition is most often caused by improper curing of the plastic. Unless a specific processing regimen is strictly adhered to with regard to time and temperature control, serious deterioration can result.

Some patients have been known to soak their prosthesis in alcohol as a method of cleaning. There is no surer method to produce crazing short of smashing it with a hammer.

Contact lens cleaner, denture soaking cleanser or just plain soap and water are recommended cleaning materials for use between regular visits to the ocularist.

Blinking over the sharp edges can obviously be very painful and can cause a bloody conjunctiva.

Resurfacing of the prosthesis may help, but more often, replacement is necessary.

**Extrusion**

Dehiscence and extrusion of the implant is not an uncommon result of wearing an improperly

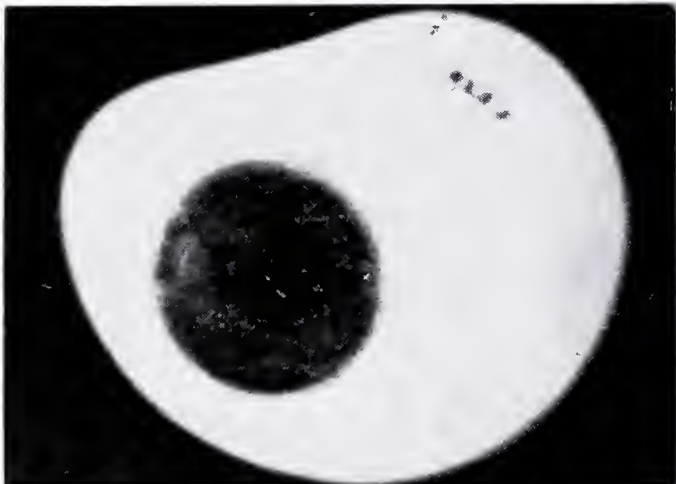


Figure 3.  
Build-up on surface.

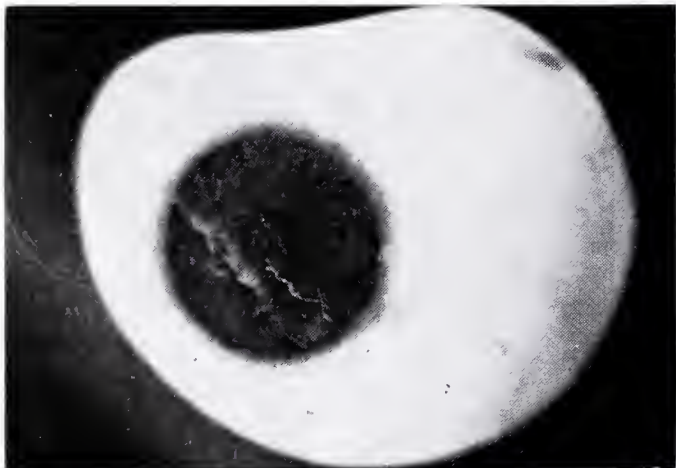


Figure 3.  
Build-up on surface.

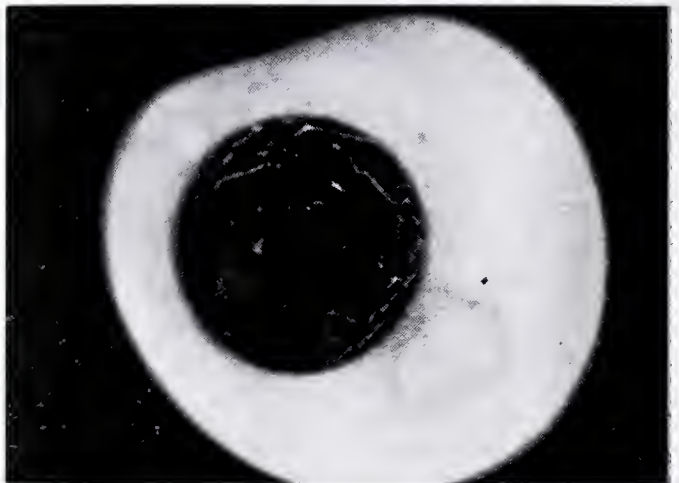


Figure 4.  
Crazing.

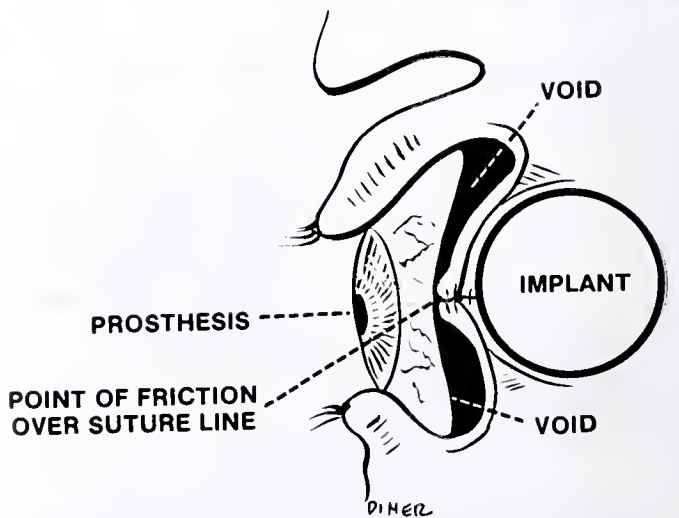


Figure 5.  
Dehiscence.

fitted prosthesis. (Figure 5.) Constant friction over a high point of tissue covering the implant can cause shredding of the conjunctiva, eventual lesions, and finally extrusion.

A diagnostic confirmation of this condition is made by removing the prosthesis and comparing its posterior surface with that of the configuration of the conjunctiva.

Ready-made prostheses (stock eyes) will always be shaped as a single cup concave surface. Rarely, if ever, is the surface of the prosthesis an exact match to conjunctiva.

Replacement of the prosthesis with one made by the impression method is strongly recommended.

#### **Broken Prostheses**

Lastly, there are those prostheses that have been chipped or broken. Some patients try to smooth the sharp edges with all manner of tools that only add insult to an already injured prosthesis. If examination of the prosthesis reveals such a break, replacement should be recommended immediately. (Figure 6.)

#### **Further Examination**

Certainly further examination for other pa-

thology should be explored if the symptoms persist. However it has been my experience, that of the multitudes of patients I have treated with these problems, only one or two were from causes other than the prosthesis itself.

#### **Summary**

The most common cause of pathology and complaints of discomfort related to the wearing of artificial eyes is an ill-fitted prosthesis (usually a stock eye) or damage to the prosthesis by improper care and cleaning. The use of stock eyes should scrupulously be avoided.

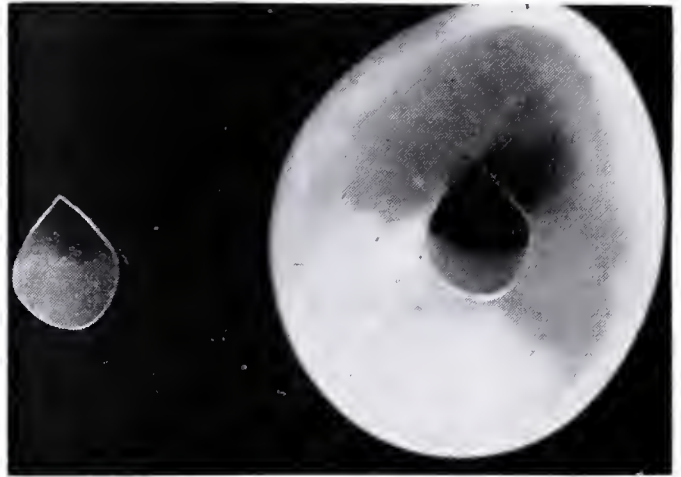


Figure 6.  
Broken prosthesis.





# ELECTROCARDIOGRAM

# OF THE MONTH

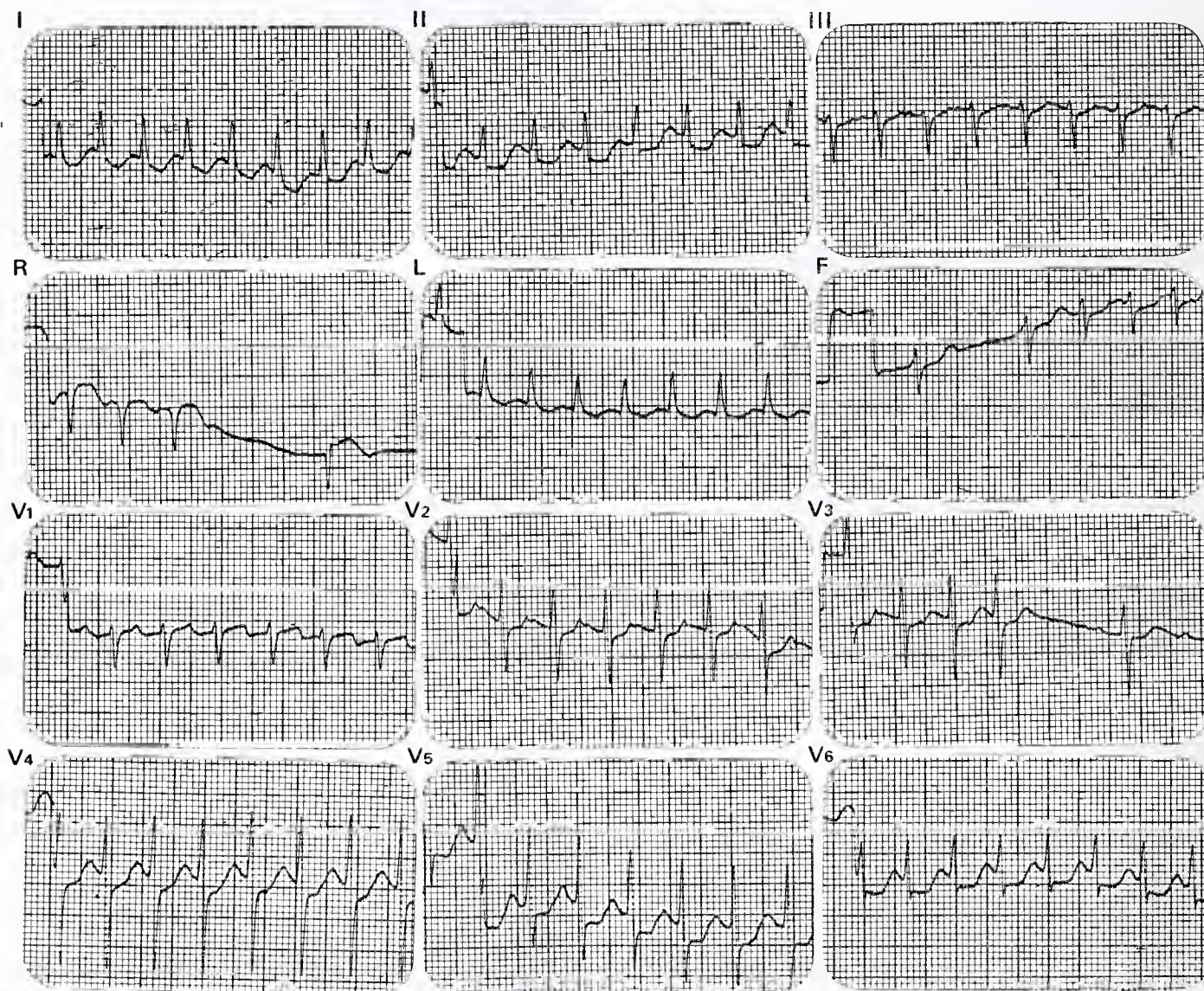


The Department of Cardiology, University of Arkansas College of Medicine  
(See Answer on Page 538)

**HISTORY:** L. W. is a 69-year-old woman with a long history of "palpitations." She presented to the emergency room because of a prolonged and continuing palpitory episode during which a choking sensation developed in her chest. On physical examination, she was hypotensive, had bilateral carotid bruits, and, other than a rapid heart rate, had a normal cardiac examination.

Her ECG is shown. Of the listed options for treatment, which would best be avoided?

- |  |                    |
|--|--------------------|
| A. Eyeball pressure.                         | E. Edrophonium.    |
| B. Direct current synchronized countershock. | F. Digoxin.        |
| C. Valsalva's maneuver.                      | G. Pressor agents. |
| D. Carotid sinus massage.                    |                    |



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# Office Orthopaedics

## Pressure (Trophic) Ulceration

Kenneth G. Jones, M.D.\*

The breakdown of skin resulting in ulceration, concomitant with sustained or repeated pressure, although occurring most often in individuals with systemic medical problems, is properly referred to as a pressure ulcer or a pressure sore, since pressure is always the precipitating etiological factor. Except in the case of the incapacitated, such as the elderly or the comatose patient, pressure ulcerations are associated with an abnormal nutritional state of the affected tissues. For that reason, these lesions have been referred to as "trophic" ulcers. Even so, pressure is always the precipitating factor.

"Trophic" ulceration is not a desirable term because it directs the physician's and patient's attention away from the primary causative factor common to all of these lesions. Even in the presence of diabetes, leprosy, meningomyelocele, spinal cord transection, peripheral nerve injuries, and like conditions, pressure is the causative agent resulting in a breakdown of the skin and, in many instances, destruction of the underlying tissues. The absence of perception of pain negates the patient's normal protective mechanism. Prolonged pressure in limited areas results in collapse and occlusion of small vessels followed by necrosis.

It is well that pressure is the precipitating etiological factor rather than an abnormal state of the involved tissues. Although frequently neither the patient nor his physician can correct the medical problem which makes the patient more susceptible to ulceration, they can do something about the precipitating factor, pressure. If the

patient is able to appreciate the consequences of pressure on anesthetic skin, and if he is taught by the physician how to avoid excessive pressure and how to care properly for his integument, he can expect to avoid ulceration and the dire complications which often follow.

Physicians who have attended patients with irreparable peripheral nerve injuries, neuropathies, or central nervous system lesions which produce segmental anesthesia, are aware that the vasomotor and secretory responses are abnormal, as the sympathetic nerves are also disturbed. Fortunately, the cool extremity seen with these continuing problems will respond to a stressful stimulus by dilatation of blood vessels and warming of the area. The overall nutritional state of the extremity is improved thereby, and the redness and increased heat inform the physician that excessive stress has been or is being applied. Unless this stimulus was applied therapeutically, this should trigger a response to eliminate the harmful stress immediately. Extremities with deficient innervation are dry as a consequence of loss of sweating and diminished sebaceous secretions. Insensitive dry hands are clumsy. This is especially so when associated with weakness or paralysis of the muscles. Insensitive dry feet often become ulcerated as a consequence of pressure. Dehydrated keratin loses its normal elasticity. Repeated folding of the skin in one area can cause fissures and ultimately ulceration. The deeper layers of the epidermis become exposed. Inflammation may be followed by infection. As cuticle along the margin of the ulcer develops into a thick callus, bending forces become more concentrated and the fissure deepens, resulting in an

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enlarging ulcer that may include tendon, joint, or bone.

Dryness and loss of glandular secretion is usually permanent for those patients with a neuropathy. Meticulous skin care will be required throughout the remainder of that patient's life if ulceration of skin and its complications are to be avoided.

Skin can be made less vulnerable to the stresses of pressure and repeated folding through an ongoing therapeutic moisturization program for the skin. This can be accomplished by soaking the part in warm water for fifteen to thirty minutes, twice daily, after which mineral oil or vaseline is applied to help retain this hydration throughout the day. The dry cuticle which piles up alongside a fissure or pressure point will usually come away with minor encouragement after the skin is once again hydrated. Caustic medications should not be used for this purpose. Callus can be removed by shaving if the deeper layers of the skin are avoided. Ulcers and fissures may be covered with one of the eschar-forming chemicals. Ulcerated parts need to be immobilized, elevated, and protected during the healing process. Lesions of the flexor surfaces should be splinted in extension to prevent shortening of tissues during healing. Otherwise, refissuring may occur on resumption of extension.

For purposes of management, pressure ulcers can be conveniently divided into three categories: (1) ischemic necrosis, where continuous pressure is applied for a relatively short period of time, e.g. bed sores and cast (dressing) ulcers; (2) enzymatic autolysis, wherein pressure is applied repeatedly during extended periods, e.g. shoe ulcers; and (3) spreading infection, associated with an uneven intermittent application of pressure, e.g. self abuse through continued activity.

The occurrence of ischemic necrosis and its

extent depends on the tissues involved and the magnitude of the force applied. In the disabled non-ambulatory patient, the heel is extremely vulnerable to sustained pressure. It is covered by very thin skin which has a poor retinaculum to support the capillary circulation. The shoe of the ambulatory patient can create sustained pressure or repeated pressure. Patients with a neuropathy are extremely susceptible to all pressures and for that reason must be ever vigilant against shoe-induced ulceration. Physiologically speaking, all of us should acquire only shoes with leather uppers which are sufficiently deep and broad across the forefoot, so that we are able to wiggle our toes freely inside the cap of the shoe when standing. New shoes should not be worn for more than a few hours a day during the first week. The susceptible person should inspect his feet very carefully for inflamed areas each time he removes his shoes. He should change shoes once or even twice during the course of a day. If ulceration is impending, the patient must remove the pressure by walking less or by altering his shoes to relieve pressure.

Simple ulcers occurring even in neuropathic extremities will heal if the pressure is removed. Because of the pain they experience, patients with ulcers but with normal sensation are cooperative to this end. Patients with insensitive extremities who do not experience pain often require monumental insistence by their physician before they will acquiesce to this requirement of nature. Improperly managed, an ulcer can develop into a spreading infection that subsequently involves all tissues. An extensive resection or an amputation may then become mandatory.

Simply stated, with the removal of pressure simple pressure ulcers will heal even when occurring in abnormal tissues. Without the elimination of pressure, simple pressure ulcers often become less simple problems.



# MEDICAL GRAND ROUNDS

## Continuous Ambulatory Peritoneal Dialysis

Ronald D. Hughes, M.D.\*

Peritoneal dialysis has been utilized as therapy for acute and chronic renal failure for many years. However, hemodialysis has enjoyed much more popularity as treatment for chronic renal failure — greater than 90 percent of the dialysis population is maintained on hemodialysis. Most nephrologists regard peritoneal dialysis as second rate therapy and therefore rarely utilize it in chronic renal failure.

However, peritoneal dialysis is an effective means of treating renal failure, as Figure 1 shows. The usual parameters used to follow dialysis patients are comparable in hemodialysis and peritoneal dialysis patients. In some reports, patients actually fare better on peritoneal dialysis than hemodialysis. Table I lists some of the theoretic benefits attributed to peritoneal dialysis by early workers.

Despite the effectiveness of peritoneal dialysis and its possible advantages, there are a number of disadvantages which account for the low utilization of peritoneal dialysis. Table II lists the primary disadvantages of peritoneal dialysis. Just as vascular access is a continuing problem in maintenance hemodialysis, peritoneal access has been a problem in peritoneal dialysis. However, the introduction of the Tenckhoff catheter provided safe chronic peritoneal access.<sup>1</sup> Peritonitis has

also been a chronic problem in long term peritoneal dialysis — however, development of better equipment and more attention to sterile technique have reduced the incidence of peritonitis to less than one percent. Fortunately, peritonitis in peritoneal dialysis patients is usually easily treated and has little morbidity/mortality.

The biggest drawback to peritoneal dialysis is the dialysis time requirement. Most hemodialysis patients require 12-15 hours of dialysis per week — peritoneal dialysis patients require 40 to 50 hours of dialysis per week. Peritoneal dialysis requires three to four times as long to achieve the same goals as hemodialysis because peritoneal solute clearance is much slower than is clearance across hemodialysis membranes, i.e., peritoneal urea clearance averages 25-20 ml/min, hemodialysis urea clearance averages 150 ml/min).

Many factors account for this marked disparity

**TABLE I.**  
**ADVANTAGES ATTRIBUTED TO PERITONEAL DIALYSIS BY EARLY INVESTIGATORS**

1. Unrestricted diet
2. Simplicity
3. Potentially better in children who fear needles
4. Potentially better in patients with rheumatic disease and at risk of endocarditis
5. Potentially safer in patients with arteriosclerotic heart disease and angina pectoris
6. Potentially safer in patients with peptic ulcer disease because of the avoidance of heparin
7. Preferred in patients with bleeding dyscrasias
8. Potentially safer pre- or postoperatively

**TABLE II.**  
**COMPARISON OF HEMODIALYSIS AND PERITONEAL DIALYSIS DISADVANTAGES OF PERITONEAL DIALYSIS**

1. Peritoneal access
2. Risk of peritonitis
3. Protein depletion
4. Time commitment

**FIGURE 1.**

**CLINICAL AREAS WITH NO SIGNIFICANT DIFFERENCE IN PATIENTS TREATED WITH PERITONEAL DIALYSIS OR HEMODIALYSIS**

	<i>Peritoneal</i>	<i>Hemodialysis</i>
Creatinine (mg/dL)	13.40 ± 4.60	14.60 ± 4.40
Uric Acid (mg/dL)	9.00 ± 2.30	8.80 ± 1.80
Bilirubin (mg/dL)	0.35 ± 0.40	0.47 ± 0.80
SGOT (mu/dL)	15.60 ± 16.50	19.10 ± 19.70
LDH (mu/mL)	220.00 ± 73.00	186.00 ± 73.00
Phosphorus (mg/dL)	5.60 ± 1.90	5.20 ± 1.90
Alkaline Phos. (mu/mL)	27.10 ± 31.40	43.60 ± 74.90
Sodium (meq/L)	139.00 ± 6.00	139.00 ± 6.00
Chloride (meq/L)	102.00 ± 9.00	100.00 ± 6.00
WBC (× 10 <sup>3</sup> /mm)	8.40 ± 2.20	7.60 ± 2.10

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Presented December 11, 1980, University of Arkansas for Medical Sciences, Department of Medicine, Division of Nephrology, Little Rock, Arkansas.

Edited by George L. Ackerman, M.D., Professor and Vice-Chairman, Department of Medicine, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Arkansas 72201.



in clearance across these two membranes. In hemodialysis, small solute clearance is dependent primarily on blood flow, dialysate flow and the dialysis membrane itself. The first two variables are easily controlled by changing the settings on a dialysis machine. The membrane in use is one which has been developed specifically to provide high clearance of urea and creatinine.

The same variables control small solute clearance across the peritoneum — blood flow, dialysate flow, and the peritoneal membrane. However, we are not so able to change these functions in peritoneal dialysis. Effective peritoneal blood flow (that portion which can participate in solute exchange) appears to be on the order of 70-80 ml/min.<sup>2</sup> Hemodialysis blood flow averages 200-250 ml/min. Dialysate flow rates in peritoneal dialysis are poorly tolerated at rates above 60-80 ml/min — hemodialysis routinely uses dialysate flow rates of 400-500 ml/min. The contribution of these two variables to overall peritoneal clearance, however, is small. Far and away the most important determinant of peritoneal solute clearance is the peritoneal membrane itself. The only portion of the peritoneum which can participate in solute exchange is that which is in direct juxtaposition to perfused capillary beds. This results in a very small dialyzing surface area. The permeability of this membrane to small solutes (urea and creatinine) is not very good. The distance solutes must traverse between blood and dialysate is relatively large — 100-200 micra. Comparable distances in a hemodialyzer are only 10-20 micra.

The combination of these many differences between hemodialysis and peritoneal dialysis make the marked differences in clearances across the two membranes easy to understand. However, improved understanding of peritoneal dialysis has not allowed improved efficiency. Many efforts<sup>3-5</sup> have been directed at improving the efficiency of peritoneal dialysis (and reducing the time requirement) but none have proven to be of clinical utility. Peritoneal dialysis remains, therefore, poorly utilized, despite its many potential benefits.<sup>6</sup>

In the late 1970's a new approach to peritoneal dialysis was developed. Rather than attempting to fit peritoneal dialysis into hemodialysis patterns (that is, thrice weekly dialysis for as short a period as possible), Popovich devised a protocol which would utilize the advantages of peritoneal

dialysis over hemodialysis. The simplicity of peritoneal dialysis lends itself very well to home dialysis. Since the inefficiency of peritoneal dialysis necessitates long hours on dialysis, he suggested increasing treatment time to the maximum — that is, 24 hours/day, seven days a week. This would produce a continuous steady state within the patient and prevent the wide swings of biochemical values and symptoms produced by intermittent dialysis. Intermittent dialysis is very "unphysiologic" — normal kidneys work all the time, the ideal dialysis would also. By having dialysate present within the abdomen continuously (stopping only 4-5 times per day to change dialysate), the patients could achieve adequate dialysis and remain ambulatory. He named this technique "continuous ambulatory peritoneal dialysis" (CAPD).

The technical aspects of CAPD are as follows: The patient has a chronic peritoneal (Tenckhoff) catheter in place. He hooks up to a plastic bag of dialysate and runs in 2000 cc by gravity. He leaves the empty bag connected to his catheter and leaves the fluid in place for 4-8 hours. During this time, he is free to function at will. After this period of diffusion, he drains out the fluid and discards it. He then instills 2000 cc of fresh fluid and resumes his usual activities.

During these long periods of time when dialysate is present in the abdomen, diffusion of toxins from the blood to dialysate occurs. At the end of long dwell exchanges, small molecule (i.e., urea) equilibration is near complete — Figure 2.<sup>7</sup> Larger molecule movement (creatinine, uric acid, etc.) is still occurring. Thus, fluid drain volume be-

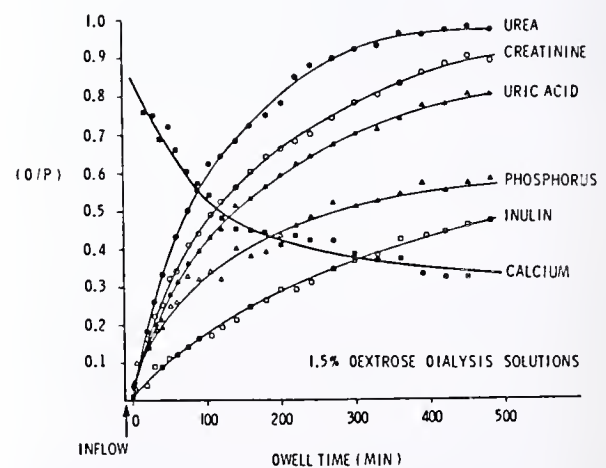


Fig. 2. Equilibration of solutes during prolonged dwell exchanges.

comes equivalent to urea clearance. If 12 liters of dialysate are drained out per day, then urea clearance equals 12 liters/day or 8.3 ml/min. Creatinine and larger molecule clearance would be somewhat less.

The use of hypertonic dialysate will induce the movement of water from the blood to the dialysate in order to attain isotonicity. Four and one-fourth percent dialysate is quite hypertonic to body fluids—it contains 4.25 grams of dextrose per 100 ml of fluid. One two-liter exchange will usually result in the removal of 800-900 ml of fluid. One and one-half percent dialysate is minimally hypertonic (1.5 grams of dextrose per 100 ml) and will remove 100-200 ml of fluid. The use of three exchanges of one and one-half percent solution and two exchanges of four and one-fourth percent solution per day will result in roughly 2000 cc of fluid removal per day, thus allowing 2000 cc of fluid intake.

Using known urea generation rates and usual peritoneal clearances, Popovich simulated peritoneal dialysis with a computer model. He postulated that five exchanges per day would result in a urea clearance of 84 liters per week. While this is not as high as hemodialysis (135 L/week), it is better than intermittent peritoneal dialysis (64 L/week). This should result in adequate dialysis and achieve a steady state blood urea nitrogen of roughly 70 mgm percent. Creatinine clearance is somewhat less and resultant serum creatinine should average 10-12 mgm/dl. However, so-called "middle molecules" (500-1500 M.W.) would actually have improved clearances over hemodialysis membranes because of the increased permeability of the peritoneum to larger molecules. If middle molecules are of importance in uremia, then CAPD has this as an added benefit.

With this background, clinical trials were undertaken. The results have been quite promising.

Biochemical control has been excellent. Figure 3 demonstrates early data from CAPD patients. It has been found that five exchanges per day are not necessary for most patients—four exchanges per day are adequate.

As shown in the figure, blood urea nitrogen and serum potassium fell below the predicted value, and in fact are lower than can be accounted for by balance studies. These data, coupled with the weight gain most patients mani-

fest, suggest an anabolic state—a rare event in dialysis patients.

In addition, average hemoglobin values rose 2 gm/dl. The mechanism remains unexplained. Hypertension, which is quite prevalent in hemodialysis patients, generally is controlled without medication in CAPD patients. Better blood pressure control relates to a tighter control of blood volume in these patients.

As well as providing good control of uremia, a number of other important benefits have been found. Table III demonstrates some of these. One of the biggest advantages is the fact that CAPD is home dialysis. Much evidence exists to suggest that home dialysis is superior to center dialysis. Patient compliance is better, psychological adaptation is better, survival data are better, and it is less expensive. However, home hemodialysis has not been enthusiastically received in this area. Home hemodialysis requires fairly extensive training (up to three months), an assistant, home remodeling, and other technical support. CAPD is home dialysis, requires only 10-15 days of training, no assistance, and little technical support. It is also somewhat less expensive than home hemodialysis.

**FIGURE 3.**  
**BIOCHEMICAL COMPARISON OF**  
**C.A.P.D. AND HEMODIALYSIS**

	6 Months		1 Year	
	CAPD	HD	CAPD	HD
Albumin (gm%)	3.5	4.1	3.6	4.2
BUN (mgm%)	55.1	65.9	54.6	66.1
Creatinine (mgm%)	11.0	11.6	11.5	11.5
Potassium (mEq/l)	4.1	4.9	3.8	4.8
Hemoglobin (gm%)	9.0	8.2	8.5	8.3

**TABLE III.**

Advantages of C.A.P.D.:

- Home dialysis.
- Improved patient independence.
- Short training period (approximately two weeks).
- Requires no assistance, machinery, water source, etc.
- Minimal dietary restrictions.
- Potentially less expensive.



Dietary restrictions are somewhat less in CAPD than home hemodialysis. Protein, potassium, salt and water intake are all liberalized. Phosphate and calcium balance are generally better.

The cost of dialysis deserves further mention. In-center hemodialysis costs roughly \$23,000-\$25,000 per year. Home hemodialysis is considerably less expensive — \$12,000-\$15,000 per year. CAPD can be done for approximately \$10,000 per year. If 15 percent of the in-center dialysis population could be changed to CAPD, a reasonable estimate according to several investigators, a savings of over \$100 million per year could be realized.

Despite these multiple advantages of CAPD, several problems persist. The biggest problem is peritonitis. Initially, this was a disturbingly frequent event. However, with technical advances, improved sterile technique and better training methods, the incidence has been reduced to an average of one episode per patient per year. Peritonitis is usually easily recognized and treated, and has very little mortality, but it remains a disturbingly common problem.

Dietary problems are also common. A high protein intake is required to offset the protein losses of CAPD. Without this, hypoalbuminemia may become quite severe. Weight gain is also a problem. Peritoneal dialysis utilizes glucose to increase osmotic gradients and remove water from the patient. Roughly 75 percent of the administered glucose is absorbed, and contributes 600 to 800 calories per day to the patients' caloric intake. The average patient on CAPD gains 10-20 pounds within the first year.

Hypertriglyceridemia is also common. It is perhaps related to the high carbohydrate load the patients receive. Long term effects of this are unknown.

We have currently instituted a CAPD program at the University of Arkansas for Medical Sciences and have enrolled eight patients. Early results are promising. Tables IV and V list our current indications and contraindications to CAPD.

In summary, I believe CAPD has proven to be a viable alternative in the treatment of uremia. It has a number of distinct advantages over currently available modalities of treatment. Several problems with CAPD persist and need resolution. Early reports are good but long term followup is needed. CAPD is not meant to replace other

forms of therapy, but it a promising adjunctive tool in the treatment of chronic renal failure.

**TABLE IV.**

Indications for C.A.P.D. are:

- Vascular access problems.
- Severe, uncontrolled hypertension.
- Inability to follow dietary instruction (i.e. salt, water, potassium and phosphate restriction).
- Marginal cardiopulmonary function.
- Patients generally unhappy or symptomatic on intermittent dialytic therapy.

**TABLE V.**

Contraindications to C.A.P.D.:

- Blindness.
- Belligerence or psychosis.
- Inadequate coordination or muscle strength (i.e. severe arthritis, hand paralysis, Parkinsonism).
- Administration of immunosuppressive drugs (systemic lupus on steroids).
- Documentation of the inadequacy of the peritoneal dialysis surface area (e.g. multiple surgical procedures with scarring).
- Open abdominal wounds (e.g. ileostomies, colostomies, nephrostomies).
- Patients well rehabilitated and content on intermittent dialytic therapy (relative).

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## EDITORIAL

# Cardiac Hypertrophy

Alfred Kahn, Jr., M.D.

In The American Journal of Medicine there have been several articles on hypertrophy of cardiac muscle that are of interest. J. F. Goodwin published an editorial entitled "An Appreciation of Hypertrophic Cardiomyopathy" (American Journal of Medicine, Vol. 68, page 797, June 1980). This is a disorder of heart muscle with outflow obstruction. There is faulty diastolic function, Goodwin points out, with poor muscle relaxation and disordered filling. He further states that there is not true obstruction to the outflow of blood but varying pressure gradients in the irregular shaped ventricular cavity. The gradient has clinical characteristics which Goodwin lists: . . . jerky pulse pattern, ejection murmur, palpable left atrial beat. Gradients are said to mask other cardiac problems; Goodwin reports, for example, that discrete subaortic stenosis may be screened. Hypertrophic cardiomyopathy may exist without gradients. The author says that there may be no diagnostic physical signs, abnormal EKG tracing, or abnormal chest film. Strict echocardiography criteria can make this diagnosis. Angiography can be a more precise way to make these diagnoses. Hypertrophic cardiomyopathy is reported to be a distinct pathologic and clinical entity, not secondary to other diseases. The author studied 100 cases of hypertrophic cardiomyopathy and found the following changes: 45% had cavity elimination, 45% had a decrease in the capacity of the mid cavity, 0% had large papillary muscles, 4% had dilatation of the left ventricle. The cause of this disorder is speculative . . . catecholamines and neural crest disorders have been suggested; catecholamines may cause a faulty growth pattern in the embryonic myocardium. This disorder can cause sudden death perhaps due to arrhythmias and this may occur

in young patients; these arrhythmias may not respond to the usual antirhythmic drugs. Of final interest in this article by Goodwin is his reinteraction of the fact that these patients tend to have large unobstructed coronary arteries.

William Grossman (American Journal of Medicine, Vol. 69, page 576, October, 1980) has written a provocative article entitled "Cardiac Hypertrophy: Useful Adaptation or Pathologic Process?" In his opening paragraph he states, "It is commonly assumed that hypertrophy of heart muscle is a useful physiologic adaptation which occurs in response to a chronic increase in myocardiac work. Cardiac hypertrophy is a consistent response to increased pressure or volume loading of the heart. It usually develops in a pattern specific to the inciting stress with concentric hypertrophy occurring in response to a sustained pressure overload and eccentric hypertrophy in response to volume overload." He goes on to relate that usually a hypertrophied heart is able to do more work — but on the other hand a hypertrophied heart may be seen with pump failure after infancy, enlargement of the heart is due to increase in the contractile proteins in the heart cells rather than an increase in number of cells — and this is physiologic and the child grows into an adult — i.e. the adult heart is bigger than the young child's heart by virtue of more contractile protein. The pathologic hypertrophy in response to strain is thought to be mediated by hormones — possibly nor-epinephrine. Grossman says that volume overload of heart muscle whereas pressure overload is characterized by an enlargement of heart muscle with volume of reduced intraventricular capacity. It is of interest that the wall stresses are different in the two types of hypertrophy — end diastolic wall stress was physiologic



level in pressure overload and elevated in volume overload; systolic wall stresses were normal in both groups. It is postulated that pressure overload leads to new myofibrils whereas volume overload leads to new sarcomeres.

Grossman states that the hypertrophy of pressure overload may be associated with normal or depressed myocardial contractility. He believes that the variation in findings reported by different authors comes from the suddenness of onset of the overload and to the degree and deviation of the overload. In humans with pressure overload hypertrophy pump failure occurs. Grossman has studied this process. In such patients with aortic stenosis, the ventricular function did not correlate with systolic pressure or the degree of hypertrophy. Wall stress was said to relate inversely to ejection fraction. Cardiomyopathy cases were different, Grossman writes, in that the heart muscle did not shorten as fast or to the same degree. A comprehensive final inclusive explanation for these findings has not yet been formulated.

Volume overload cardiac hypertrophy, Grossman states, may be associated with normal cardiac

contractility. It is said that in long standing volume overload there may be pump failure. Grossman postulates that this is due to "the inability to sustain addition of new myofibrils in parallel to balance the series of addition of new sarcomeres leads to high wall stress, decreased fiber shortening and ventricular failure" these patients may not improve after corrective cardiac surgery and this is a problem to explain. Furthermore according to Grossman, the ability to measure heart muscle contractility can be extremely hard in some patients with chronic volume overload.

Lastly Grossman states that ventricular compliance is an important factor in determining the contractility of both types of cardiac hypertrophy. He says that chamber stiffness is increased usually — and that in addition there may be muscle stiffness. To stretch the stiffened heart over high hydraulic pressure may be required to stretch the heart adequately.

This discussion ends with Grossman challenging physicians to try and prevent pathologic hypertrophy.



## "From Other Years"

(From UAMS Library, History of Medicine/  
Archives Division.)

*Arkansas Medical Monthly*  
4(1):45-46 July, 1893

### Pharmacy for Women

Brethren Hart of Pine Bluff and Bond of Little Rock have gotten into the columns of the famous *Woman's Journal* in great style. Hart is a strong advocate of woman's rights. We know he is because we heard his speech at the banquet of the State Association a few weeks ago.

A correspondent from Little Rock to the *Woman's Journal* writes as follows:

"A few weeks ago the State Pharmaceutical Association of Arkansas held its annual meeting in this city. At the same time, and in an adjoining room, the General Assembly of the Cumberland Presbyterian Church of the United States held its session.

"The woman question came up almost simultaneously in both bodies. After a long debate,

the woman delegate obtained her seat in the Assembly, and the world still moves!

"One morning, when the galleries of the druggists' meeting hall were filled with Presbyterian delegates, the woman question came up among the druggists, in a paper advocating 'Women in Pharmacy,' by Mr. E. N. Hart, a prominent pharmacist of Pine Bluff, Ark., who was subsequently elected President of the Association. Mr. Hart is a younger scion of a Southern Democratic family, and a representative Southern Democrat of the 'after-the-war' period. His paper advocating the profession of pharmacy for women was well received, and was ordered printed in the proceedings. Before the subject was passed, Dr. John B. Bond, of this city, a regular old-fashioned Confederate soldier (who is not just as sorry for his political sins as he ought to be), took the floor and made a ringing 'off-hand' speech in behalf of the rights of women. The doctor is well known in pharmaceutical circles from the Atlantic to the Pacific, and his opinion will have weight."

## MEDICINE IN THE NEWS



### THE MONTH IN WASHINGTON

Some \$4 billion of the Reagan Administration's proposed \$41 billion budget cuts will be sliced from health programs under the domain of the Department of Health and Human Services (HHS). And additional cuts in all sectors will be listed in the President's full revision of the budget for the fiscal year beginning this October — fiscal year 1982.

The cuts for health from previously projected spending levels featured \$2.7 billion in savings through consolidation of HHS categorical grant programs and a 25 percent rollback in the total federal contribution. A cap on federal payments for the Medicaid program would trim the U. S. budget by \$1.2 billion.

Other proposed HHS cuts included: health planning, \$100 million; Professional Standards Review Organizations (PSROs), \$15 million; National Institutes of Health (NIH), \$197 million; Health Professions Education, \$280 million; Health Maintenance Organizations (HMOs), \$24 million; Public Health Service hospitals, \$110 million; National Health Service Corps (NHSC) scholarships, \$31 million.

All told, HHS budget authority would be reduced by \$5.2 billion and outlays by \$6.9 billion in fiscal 1982. More than \$1 billion of this represents slashes in welfare spending. For the current fiscal year that ends in October, these health programs would be trimmed by \$828 million.

The Administration's block grant proposal covers a wide span of health activities, including such programs as community health centers, migrant clinics, emergency medical services, alcohol and drug abuse services, health incentive grants, venereal disease, immunizations, etc. About 40 categorical grants for health and social services currently budgeted for \$9.4 billion next fiscal year are involved.

Explaining the plan to consolidate these programs, the Administration said "day to day management has developed into a bureaucratic morass of planning, regulating, and reporting at the federal, state and local levels."

A block grant approach would give the states greater flexibility and responsibility. "States could select the service delivery agency best able to provide certain services that are now provided by direct federal grantees, the budget document said. "The overall result would strengthen state governments and provide publicly-financed services more effectively and at lower costs to those in need."

Legislation to carry out the plan will be sent to Congress with an effective date as of Oct. 1. The proposed funding level for fiscal 1982 is 75 percent of the previously-budgeted estimate, or \$6.8 billion, a cut of \$2.7 billion. Because of "significant savings in program overhead and more efficient service delivery due to the elimination of overlapping service responsibilities, this funding change need not result in a reduction of services," the Administration said.

Hinting at a future broad health plan proposal, presumably along the lines of "pro-competition" health bills, the economic report said government regulatory efforts to date "have failed to stem the increase in costs because they fail to affect the underlying cost-increasing bias in the health care system that results from the insulation of all parties in medical care markets from the cost consequences of their decisions. The Administration will propose comprehensive legislation to remedy these market distortions."

As an interim measure, the Administration said it will propose legislation to "establish a limit on the Medicaid program's unconstrained growth."

"High federal matching, excessive benefit provisions and overly-generous eligibility have made the Medicaid program a very poorly managed social program that fails to provide cost-effective services to those most in need," the Administration said. Eligibility errors alone are estimated to cost about \$1.2 billion a year.

The federal payment limit would be structured to cut federal expenditures \$100 million below the current base estimate and would be allowed to increase only five percent in fiscal 1982, rising thereafter with the overall rate of inflation. Fed-



eral spending would be reduced by \$1.2 billion next year, rising to \$5 billion in 1986. The Administration said it believes "this degree of restraint can be achieved by states without reducing basic services for the most needy. . . . No state, however, would be prevented from providing whatever additional services it deemed appropriate out of its own resources."

The economic report said the Administration "will propose to end large general subsidies for the training of physicians and other health professionals. Such programs are no longer necessary in light of the growing projected supply of most health professionals. Instead, federal programs will be directly targeted on training needs of national priority."

The Administration is asking only \$120 million for health professions education next year, compared with the \$400 million projected under current spending levels and the current year's budget of \$368 million.

The federal grant and loan subsidy program for Health Maintenance Organizations (HMOs) would be eradicated by the Administration. "After eight years of federal support, the feasibility of HMO prepaid health care delivery has been adequately demonstrated."

Legislation will be proposed to strike present "unnecessarily restrictive requirements" for federal qualifications of HMOs, making private capital available for HMO development and "obviating the need for further subsidies." No new grants or loans will be made, but HMOs now receiving support will be allowed to complete their grant period. The program would be completely phased out by 1983.

As reported earlier, the Administration will not seek new scholarships for the National Health Service Corps program that sends medical teams to physician-shortage areas. At most, 6,000 NHSC people are needed now to cover health manpower shortage areas, the Administration said. A freeze on new scholarships still will allow the corps to swell to 9,000 members by 1990.

Students who currently have NHSC scholarships will be allowed to complete their training.

Earmarked for oblivion by the Administration is the Professional Standards Review Organization (PSRO) program "consistent with a two-year Administration timetable to develop and carry

out health financing reforms that encourage competition in the health sector."

"Contracts will be renewed with only those PSROs judged most effective in controlling health care costs," and some transitional funding will be allowed through 1983 to allow competing systems of health care to contract for the services of effective PSROs.

The Administration said recent studies of the program show that PSROs raise national health care spending, rather than reduce it.

The PSRO program will be pared to an appropriation of \$70 million next year, from the current \$174 million, to \$67 million the following year and to zero by fiscal 1984.

The controversial health planning program, as expected, was ticketed for destruction. Planning "has not proved effective in controlling costs on a national basis, and it inhibits market forces needed to strengthen competition and provide less costly services." The certificate-of-need requirement under planning calls for a "government franchise" and inhibits free market entry, "often propping up high-cost institutions behind a government-created entry barrier."

Health planning would be phased-out over two years, receiving \$58 million next year and no money by 1984. Outlays in the current year are expected to reach \$162 million.

The budget squeeze that would keep increased funding below the projected rate of inflation would hit the National Institutes of Health where the Administration will seek \$3.7 billion next fiscal year, compared with the \$3.6 billion this year. The eight Public Health Service hospitals and 29 clinics would be closed down over the next four years at an estimated savings of more than \$900 million over the period. The Administration said the system "is under-used and actually aggravates health care costs in cities where the hospitals are located." All of the hospitals are located in areas with an excess supply of hospital beds, the report said.

No reduction is planned for the \$45.4 billion Medicare program. Other programs escaping the economy drive are the basic retirement program of Social Security; the Veterans Administration compensation programs for service disabilities and non-service-connected disability pensioners; the school lunch and breakfast programs; the Head Start program for pre-schoolers; the sup-

plemental security income fund for the blind, elderly and disabled; and the summer youth jobs program.

\* \* \* \*

Rumbles of protest quickly built up against President Reagan's proposed health spending cuts.

The nation's governors, meeting in Washington, D. C., rejected as "not acceptable" the plan to limit federal payment to states for Medicare costs. Utah Gov. Scott Matheson presented the White House with the governors' position that "a uniform, nationwide five percent cap on federal financial participation is not acceptable."

Under the plan, the states would have to come up with an additional \$1 billion next fiscal year to keep Medicaid services operating at their present rate in order to make up for the federal shortfall.

HHS Secretary Richard Schweiker told the governors at their annual meeting that the federal cap is needed because Medicaid "has unfortunately been out of control."

The HHS Chief noted that the "cap" is designed as an interim measure until far-reaching changes can be made in the medical system designed to induce greater competition. "The only way to cut the budget is to cut the budget," he said, indicating that the Administration's position is firm on the issue.

The governors adopted a resolution that they will "vigorously oppose" attempts to shift the costs of the federal budget cuts to the states. They insisted state governments must have time to adjust to the cuts and have increased flexibility in administering federal programs.

Moving against the Administration current, the governors said the federal government should take over all welfare and medicaid costs.

Only three of the 49 governors attending the conference opposed the resolution.

The Administration's economic report with its list of cuts and eliminations in health and other programs was made public when the American Health Planning Association was holding its annual meeting here. The news that planning was scheduled for elimination jolted the participants.

Said Harry Cain, AHPA Executive Director: "The proposal to phase out quickly the health planning program is likely to cost the government — and all the consumers, providers and other payers of health care — a great deal more than the

\$100 million it purports to save."

\* \* \* \*

A very strong case exists for cessation of the federal health planning program, the American Medical Association has told the Congress.

Planning has become "a network of quasi-regulatory agencies more responsive to federal directives and concerns than to the health and medical needs of the communities purportedly served," the AMA told the Senate Appropriations Subcommittee on Health.

In a letter to subcommittee Chairman Harrison Schmitt (R.-NM), James Sammons, M.D., AMA Executive Vice President, said the health planning program "has clearly done more to interfere with health care competition than to foster it." The certificate-of-need requirements "establishes barriers to entry in a market for competitors and, therefore, inhibit the market from operating efficiently to allocate resources," said Dr. Sammons.

The program has had little effect in containing costs, he said. The AMA House of Delegates recently reaffirmed AMA policy calling for repeal of the Health Planning Act.

Dr. Sammons noted that the AMA is developing principles for voluntary health planning which can serve as a foundation for establishing priorities and purposes for local planning agencies.

\* \* \* \*

President Reagan has nominated Edward Brandt, Jr., M.D., Vice-Chancellor for health affairs since 1977 for the University of Texas, Austin, to be HHS Assistant Secretary for Health.

Brandt, whose nomination is subject to Senate confirmation, was supported for the HHS post by the American Medical Association, for which he currently chairs its section on medical schools. Brandt would succeed Julius Richmond, M.D., who also held the post of Public Health Service (PHS) Surgeon General.

Also reported by the White House is the appointment of C. Everett Koop, M.D., Surgeon-in-Chief of Children's Hospital of Philadelphia, as HHS Deputy Assistant Secretary for Health.

An additional appointment reported by the White House is the selection of Carolyn Davis, R.N., Ph.D., to head HHS' Health Care Financing Administration. Associate Vice President for Academic Affairs at the University of Michigan, Ann Arbor, since 1975, Davis earlier served as Dean of the University's School of Nursing from 1973 to 1975.



Accompanying the White House announcement of Dr. Brandt's appointment was the statement "— it is the President's intention to see that this position is elevated to Under Secretary in accordance with a reorganization plan that will be announced later." This has led to speculation that if Dr. Brandt moves up to Under Secretary, Dr. Koop would become Assistant Secretary, and possibly, named as Surgeon General of the Public Health Service.

\* \* \* \*

The Administration is considering submission of a catastrophic health benefit plan to Congress later this year.

The surprise disclosure came from HHS Secretary Richard Schweiker as he opened defense of the Administration's health and welfare spending cuts in testimony before the House Ways and Means Committee.

Asked whether there was any possibility of the Administration suggesting extra benefits anywhere in light of the down-the-line cuts projected for health, Schweiker told the committee "we're looking frankly at a catastrophic health program." He said he didn't "have a feel" yet of what the final decision will be, but suggested that some money "set-aside" for catastrophic may be factored into the Administration's detailed budget.

Schweiker did not say whether a catastrophic plan would be part of the "pro-competition" health legislation the Administration has said it will propose. In his congressional appearance, Schweiker said "I hope later this year we will present a health care delivery model to Congress."

The Administration is supporting a "consumer choice" or "pro-competition" approach under which changes in the federal tax treatment of private health insurance would be designed to spur purchase of cheaper coverage with high deductibles. Competition among insurers and HMOs theoretically would drive down the cost of medical care.



#### **CADUCEUS 13th ANNUAL ALUMNI WEEKEND**

The Arkansas Caduceus Club's 13th Annual Alumni Weekend will be held June 12-14. Plans for the weekend were announced by Jeane Hundley, Executive Director of the Caduceus Club. Headquarters for the weekend will be at Little Rock's Camelot Inn.

Honored guests at this year's reunion will be

graduates from the Class of 1931. Classes graduating from the UAMS College of Medicine in years ending with the digits "1" and "6" will hold individual reunions at the Little Rock Club on Saturday evening, June 13.

Planning this year's scientific session, which is held in conjunction with Alumni Weekend, are committee members James J. Pappas, M.D. '56, Little Rock, Chairman; William H. Riley, M.D. '59, Little Rock; Neil Sims, M.D. '50, Little Rock; and W. Dale Morris, M.D. '65, Little Rock.

Paul Wallick, M.D. '58 of Monticello, President of the Arkansas Caduceus Club, and Harry P. Ward, M.D., Chancellor of UAMS, will welcome Alumni Weekend participants to the Scientific Session on Saturday, June 13, at 9:00 a.m. The session, sponsored by College of Medicine's Office of Continuing Education, is being held in the Amphitheater (Room 141 A & B) of the Education II Building, G Level, on the UAMS campus.

Guest speakers and their topics at the session include:

"A Quick Look at Today's Teenagers," Robert F. Shannon, M.D. '57, UAMS, Professor and Head, Department of General Psychiatry.

"Sedatives and Narcotics in Controlling Pain," Eugene H. Taylor, M.D. '62, Clinical Instructor, UAMS.

"New Hope for Nerve Deafness — The Cochlear Implant," H. A. Ted Bailey, Jr., M.D., '47, UAMS, Clinical Professor, Department of Otolaryngology.

"Carcinoma of the Breast — An Overview," Kent C. Westbrook, M.D. '65, UAMS, Professor, Department of Surgery.

"Cardiac Life Support," Charles H. Rodgers, M.D. '70.

"Challenging Pulmonary Infections," Roger C. Bone, M.D. '67, UAMS, Professor, Department of Internal Medicine.

Following each presentation, there will be time allowed for a question and answer period.

During the weekend, alumni will also be guests at 2:30 on Saturday afternoon at the dedication of the Winston K. Shorey Building and unveiling of a plaque to commemorate the establishment of the Isaac Folsom Clinic in 1892.

All College of Medicine alumni are invited to attend the weekend activities. For more information contact the Arkansas Caduceus Club, Box 114, University of Arkansas for Medical Sciences, Little Rock 72205, or call 501-663-1975.

# keeping up

## Category 1 Continuing Medical Education Programs Available in Arkansas

### **OPHTHALMOLOGY RESIDENTS' AND ALUMNI DAY**

Presented by John Shock, M.D., *June 5, 8:00 a.m. to 5:00 p.m.*, UAMS Education II Building. Hours of credit and fee undetermined at this time. Sponsored by UAMS.

### **ESTROGEN REPLACEMENT**

Presented by Kermit Krantz, M.D., *June 16, 7:30 p.m. to 9:30 p.m.*, Ford Room, St. Edward Mercy Medical Center, Fort Smith. Two hours

Category I credit. Sponsored by AHEC-Fort Smith. No fee.

### **THIRD ANNUAL FAMILY PRACTICE INTENSIVE REVIEW SEMINAR**

Dr. Ben N. Saltzman, Program Director, *June 19-21, 8:00 a.m. to 5:15 p.m.* each day, Education II Building, Room G141, UAMS. Twenty-one hours Category I credit. Fee \$115. Sponsored by UAMS.

### **RECURRING EDUCATION PROGRAMS**

Unless otherwise indicated, programs are for one to two hours Category I credit.

#### **EL DORADO — AHEC**

*Pathology Conference*, second Tuesday, 12:30 p.m. to 1:00 p.m. Associated Pathologists' Laboratory.  
*Chest Conference*, third Wednesday, 12:30 p.m. to 1:00 p.m. Warner Brown Hospital.

#### **FAYETTEVILLE — AHEC-NW**

*Medicine Teaching Conference*, each Saturday, 7:30 a.m. to 8:30 a.m., Washington Regional Medical Center.  
*Surgical Teaching Conference*, June 4, 1:00 p.m. to 2:00 p.m., "Shock"; July 2, 1:00 p.m. to 2:00 p.m., "Injury and Metabolism." AHEC Clinic.  
*Pediatric Teaching Conference*, June 9, 12:30 p.m. to 1:00 p.m., "S.I.D.S."; July 14, 12:30 p.m. to 1:00 p.m., "Adolescent Depression". Washington Regional Medical Center.  
*OB-GYN Teaching Conference*, June 16, 1:00 p.m. to 2:00 p.m., "Labor"; July 21, 1:00 p.m. to 2:00 p.m., "Endometriosis". AHEC Clinic.

#### **FAYETTEVILLE — VA MEDICAL CENTER**

*Radiology Conference*, June 4, 18, and July 2, 16, 1:00 p.m., Conference Room.  
*Pathology Conference*, June 16 and July 21, 3:00 p.m., Conference Room.  
*Mortality Conference*, June 11 and July 9, 3:00 p.m., Conference Room.  
*Peer Exchange*, June: "Infectious Diseases", July: "Kidney Transplant". (For further information contact VAMC.)

#### **FORT SMITH — AHEC**

*Tumor Conference*, each Tuesday, 12:00 noon, Fourth Floor Conference Room, Sparks Regional Medical Center.

#### **JONESBORO — AHEC-NE**

*Interesting Cases*, second and fourth Tuesday, 12:00 noon, Dietary Conference Room, St. Bernard's Regional Medical Center.  
*Tumor Conference*, third Tuesday, 12:00 noon, Dietary Conference Room, St. Bernard's Regional Medical Center.  
*Medical Lecture Series*, each Friday, 12:00 noon, Dietary Conference Room, St. Bernard's Regional Medical Center.

#### **LITTLE ROCK — BAPTIST MEDICAL CENTER**

*Pulmonary Care Conference*, each Tuesday, 12:00 noon to 1:00 p.m., Conference Room #1.  
*Cardiopulmonary Resuscitation Course*, second Wednesday, 6:00 p.m. to midnight, Human Resource Development Area. Six hours Category I credit.  
*GI Roundup*, second and fourth Wednesday, 12:00 noon to 1:00 p.m., Conference Room #1.  
*Emergency Medicine Conference*, June 3, 17, and July 1, 15, 29, 12:30 p.m. to 1:30 p.m., Conference Room #1.  
*Morbidity and Mortality Conference*, first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.  
*Surgery Conference*, each Thursday except first Thursday, 8:00 a.m. to 9:00 a.m., Conference Room #1.  
*Anesthesiology Conference*, third Thursday, 7:00 a.m. to 8:00 a.m., Dining Room #3.  
*Case of the Month*, third Thursday, 12:00 noon to 1:00 p.m., Conference Room #1.

As organizations accredited for continuing medical education by the Liaison Committee on Continuing Medical Education, the organizations named certify that these continuing medical education activities meet the criteria for the credit hours specified in Category I of the Physician's Recognition Award of the American Medical Association.



# **LITTLE ROCK — ST. VINCENT INFIRMARY**

*Interhospital GI Problems Conference*, first Monday, 6:00 p.m. to 7:30 p.m., Room E155, Education Wing.  
*Pediatric Conference*, first and third Monday, 12:30 p.m. to 1:30 p.m., Room E159, Education Wing.  
*Interhospital Urology Grand Rounds*, first Tuesday, 5:30 p.m. to 6:30 p.m., Room E159, Education Wing.  
*Peripheral Vascular Disease Conference*, third Tuesday, 6:00 p.m. to 7:00 p.m., Room E159, Education Wing.  
*Neuropathology Conference*, third Tuesday, 5:00 p.m. to 6:00 p.m., Room S1169, Laboratory.  
*Pulmonary Conference*, first and third Thursday, 12:00 noon to 1:00 p.m., Room E159, Education Wing.  
*Cardiology Conference*, second and fourth Thursday, 12:00 noon to 1:00 p.m., Room E155, Education Wing.

# **LITTLE ROCK — UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES**

*Internal Medicine Grand Rounds*, each Tuesday, 8:00 a.m. to 9:00 a.m., Education I Auditorium.  
*Anesthesiology Complications Conference*, each Tuesday, 7:00 a.m. to 8:00 a.m., Room 2E04, UAMS Hospital.  
*Neuroradiology Course*, each Wednesday, 4:00 p.m. to 5:00 p.m., Radiology Conference Room.  
*Radiology Continuing Education Lecture Series*, two Wednesdays each month, 6:00 p.m. to 7:30 p.m., Radiology Conference Room.  
*Residents Anesthesia Seminars*, each Wednesday and Thursday, 3:30 p.m. to 4:30 p.m., Room 2E04, UAMS Hospital.  
*Ophthalmology Problem Case Conference*, each Thursday, 4:00 p.m. to 6:00 p.m., UAMS Eye Clinic.  
*Categorical Course in Radiology*, each weekday except Wednesday, 4:15 p.m. to 5:00 p.m., Wednesday, 5:00 p.m. to 5:45 p.m., Radiology Conference Room.



## **P E R S O N A L   A N D   N E W S   I T E M S**

### **CANDIDATE**

One of the candidates for the Clarendon School Board election was Dr. Ben Pupsta.

### **NEW PHYSICIAN**

Dr. David Lupo, formerly of Little Rock, has announced the opening of his office at Doctors Clinic in Des Arc.

### **DR. GUENTHNER SPEAKS**

Dr. John Guenthner recently spoke to the Twin Lakes Chapter, National Association of Retired Federal Employees, about "What's New" in medical and hospital care.

### **APPRECIATION DAY**

April 7 was Doctors' Appreciation Day in Berryville. The special day honoring Berryville physicians was celebrated at the annual Chamber of Commerce banquet.

### **DR. WATSON HONORED**

The Southern Neurosurgical Society, during its annual meeting in Dallas, granted its Distinguished Service Award to Dr. Robert Watson of Little Rock. Dr. Watson, one of the founding members of the Society and a past president, was the first recipient of the recently-established annual award.

The award is granted to southern neurologists in recognition of the unique and special contri-

butions they have provided to their communities and to the South in the establishment and development of ongoing services to assure continued and future neurological care to the people of their state.

### **DR. WARREN IS SPEAKER**

Dr. George Warren of Smackover gave a film presentation on Colon Cancer during a recent meeting of the Smackover Lions Club.

### **DR. SALTZMAN SPEAKS**

At a recent meeting of the Commercial Bank Community Development Board in Monticello, Dr. Ben Saltzman of Little Rock spoke on the growing popularity of the family practice specialist area.

### **DR. CALDWELL CERTIFIED**

The American Board of Obstetrics and Gynecology has awarded diplomate status to Dr. David L. Caldwell of Benton.

### **BOARD CHAIRMAN**

Dr. Marlin Hoge, Fort Smith, has been elected chairman of the board of City National Bank of Fort Smith.

### **DR. SHRINER LOCATES**

Dr. Walter Shriner, formerly of Springfield, Illinois, has joined Dr. Kenneth Seifert in Hot

Springs. Dr. Shriner is a surgeon and specialist in digestive diseases.

#### **SCHOOL ELECTION**

Dr. Robert L. Prosser, III, of McGehee has announced his candidacy for the McGehee School Board.

#### **MUSEUM PROGRAM**

Dr. Stanley Applegate of Springdale showed slides and discussed his recent trip to mainland China during a meeting at the Shiloh Museum.

#### **DR. PENNINGTON HONORED**

The Area Agency on Aging of West Central Arkansas has presented Dr. James O. Pennington of Ola with the 1980 Community Service Award. Dr. Pennington was honored because of his services to the elderly residents of Yell County.

#### **DR. BOST IS SPEAKER**

Dr. Kingsley Bost of Russellville spoke to the Ola PTA on child abuse.

#### **WEST HELENA PEDIATRICIAN**

Dr. N. Rangaswami, a native of Madras, India, has opened his office for the practice of Pediatrics at 521 Plaza Street in West Helena.

#### **CRITICAL CARE WORKSHOP**

Drs. John Haggard, Ron Kaler and Robert Aspell of Hot Springs spoke at a "Critical Care Workshop" for nurses to acquaint them with new techniques in emergency and critical hospital care.

#### **DR. WILSON SPEAKS**

Dr. Carolyn Wilson of Mountain Home recently spoke to the Twin Lakes Chapter of the American Association of Retired Persons. Dr. Wilson discussed the Hospice program.

#### **DR. LILLY ELECTED**

Dr. Ken Lilly of Fort Smith has been elected chairman of the Advisory Council of Southwestern Baptist Theological Seminary of Fort Worth. The council assists the seminary administration in development and fund raising, general promotion of the seminary and student recruitment.

#### **PHYSICIAN RUNNER**

Dr. Richard G. Burns of Jonesboro participated in the recent marathon held at Booneville.

#### **DR. ABRAMS RELOCATES**

Dr. Joe Abrams, formerly of Conway, has opened an office at 105 North Jackson in Cabot.

#### **DR. HOLDER SPEAKS**

Dr. James Holder of Monticello participated in a panel program sponsored by the Monticello

Community Education. The program was designed to provide information to help persons know what to do when deciding to call the doctor about problems other than emergencies.

#### **HOT SPRINGS GAINS PHYSICIANS**

Hot Springs has gained three physicians. Dr. James W. Campbell is a General and Peripheral Vascular surgeon; Dr. Richard Braley is an Ophthalmologist; and Dr. Paul Williams is a Neurosurgeon.

#### **ORTHOPAEDISTS INDUCTED**

Arkansas physicians inducted as Fellows of the American Academy of Orthopaedic Surgeons at the organization's annual meeting in Las Vegas were: Drs. Charles A. Ledbetter and Don R. Vowell of Harrison; Drs. Marvin Mumme and William Sherrill, Jr., of Fort Smith; Dr. W. John Giller of El Dorado; Dr. Allan D. Kincheloe of Hot Springs.

#### **DR. MOSS HONORED**

Citizens of McGehee surprised Dr. Swan B. Moss with a check for over \$1,000 to start a drive for an infant fetal monitor. The monitor is in honor of Dr. Moss' 40 years of practicing medicine in Southeast Arkansas.

#### **SEMINAR BY PHYSICIANS**

Fort Smith physicians, Drs. Sam Landrum, Carl Williams, Albert MacDade, Peter Irwin and Michael Coleman, participated in "Lifesaving Techniques for the Public" at Westark Community College in Fort Smith. The seminar was sponsored by Westark College, the Arkansas Trauma Society and the Arkansas Committee on Trauma of the American College of Surgeons.

#### **JACKSON COUNTY MEDICAL SOCIETY**

Drs. Jim Adamson and Bob Ridout of Little Rock spoke at the March meeting of the Jackson County Medical Society about pheochromocytoma.

1980-81 officers elected for the Society were: Drs. Jack S. Young as president, Jerry Frankum as vice president, J. D. Ashley as secretary-treasurer, J. W. Carney as chaplain and Joel Cook as delegate.

#### **DR. JEFFERSON SPEAKS**

Dr. Tom Jefferson of Ozark spoke at a recent meeting of the Ozark Business and Professional Women's Club. Dr. Jefferson spoke on projects for physicians.

#### **DR. McGUIRE MOVES**

Dr. Sam A. McGuire of West Memphis, has an-



nounced he will join the Forrest View Clinic at Forrest City.

#### HELENA GAINS PHYSICIAN

Dr. Lance D. Whaley has opened his office at 671 Oakland Avenue in Helena. Dr. Whaley is a board-certified obstetrician and gynecologist.

#### DR. GRIFFIN

Dr. Rodney Griffin of Magnolia is serving as Professional Education Chairman of the Columbia County Unit of the American Cancer Society. The Unit recently sponsored a breast cancer clinic.

#### ROTARY SPEAKER

Dr. Bud Dickson of Little Rock recently addressed the Hot Springs Rotary Club. Dr. Dickson's presentation was of new techniques involved in the correction of knee injuries which are most common among football players.

#### DOCTORS HONORED

Drs. Joseph Ledbetter, Aaron Modelevsky, W.

F. Shepherd and John C. Faris of Jonesboro and Joe Verser of Harrisburg were honored in recognition of more than 35 years of practice during the recent Craighead-Poinsett Counties Doctors' Day celebration. Drs. Ledbetter, Shepherd and Grover Poole of Jonesboro spoke on the differences between present-day medicine and medicine 35 years ago.

#### CARROLL COUNTY PHYSICIANS

Three physicians have announced they will locate in Carroll County: Drs. Mark D. Bonnell, Paul J. Bubak and William K. Flake of Phoenix, Arizona.

#### PEDIATRICIAN SPEAKS

Dr. Charles Floyd of Fort Smith spoke to the King School PTA in Van Buren recently. The subject of Dr. Floyd's talk was child abuse.

#### DOCTOR SPEAKS

Dr. Jim City of Searcy was speaker at the kickoff campaign in DeQueen of the local unit of the American Cancer Society.



## NEW MEMBERS

#### DR. TOMMIE G. WHITE

Dr. Tommie White is a new member of the Faulkner County Medical Society.

A native of Conway, Dr. White attended the University of Central Arkansas. He was graduated from the University of Arkansas College of Medicine in 1976.

Dr. White served a Pathology internship with the University of Arkansas College of Medicine.

From 1977 to 1979, he was in Family Practice residency at Fort Smith with AHEC.

A board certified Family Physician, Dr. White is associated with Conway Clinic.

#### DR. SESHAGIRIRAO PEMMARAJU

Dr. Pemmaraju is a new member of the Garland County Medical Society.

A native of India, Dr. Pemmaraju received his pre-med education at Andhra University, India. In 1965 he was graduated from the Andhra Medical College. Dr. Pemmaraju served his internship with King George Hospital in Visakhapatnam, India, and Good Samaritan Hospital in Cincinnati, Ohio. His Pathology residency was with Methodist Hospital, Gary, Indiana, and the University of Cincinnati Medical Center. He also served a fellowship with the University of Cincinnati Medical Center.

Dr. Pemmaraju is a board certified Pathologist practicing at 501 Central Tower Building in Hot Springs.

**DR. WUU-SHYONG (WILLIAM) WU**

A native of Tainan, Taiwan, Republic of China, Dr. Wu is a new member of the Union County Medical Society.

Dr. Wu acquired his pre-med education at National Taiwan University and his medical degree at College of Medicine, National Taiwan University, Haipei, in 1970. After an internship with Barberton Citizen Hospital, Ohio, he served his residency with Mount Carmel Mercy Hospital and Medical Center in Michigan. He is a board certified Internist.

Dr. Wu has his office for the practice of Internal Medicine and Nephrology at 317 Thompson, Suite 400B, in El Dorado. He is also associated with the Arkansas Health Education Center.

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The Pulaski County Medical Society has added the ten following physicians to its membership roll:

**DR. JAMES H. FRASER**

Dr. Fraser, a native of Little Rock, is board certified by the American Board of Obstetrics and Gynecology.

After being graduated by Hendrix College in 1967, Dr. Fraser received his medical education at the University of Arkansas College of Medicine. Dr. Fraser served his internship with the University of Arkansas Medical Center. From 1971 to 1974, he served an Obstetrical-Gynecological residency at the same institution.

Dr. Fraser taught with the Naval Reserve Medical Center at Charleston, South Carolina, from 1974 to 1976 and with the Naval Reserve Medical Center in Jacksonville, Florida, from 1978 to 1980.

Dr. Fraser practices Obstetrics-Gynecology at 8500 West Markham in Little Rock.

**DR. AUBREY J. HOUGH, JR.**

Dr. Hough was born in Little Rock and graduated from Hendrix College in Conway in 1962. In 1970, he was granted his M.D. by Vanderbilt University in Nashville.

After serving an internship at Vanderbilt, Dr. Hough received his training in Pathology at Vanderbilt and the National Institutes of Health in Bethesda, Maryland.

Dr. Hough served as an Assistant Professor at Vanderbilt University from 1975 to 1978 and as an Associate Professor from 1978 to 1980.

Dr. Hough is a board certified Pathologist practicing at 300 East Roosevelt Road in Little Rock.

**DR. FAHMY A. MALAK**

Dr. Malak was born in Egypt. He is a graduate of the Assia/American College in Egypt. In 1962, he was graduated by the Cairo University Medical School. Dr. Malak's internship was at Lake County Methodist Hospital in Gary, Indiana. He served one year of his Pathology residency at the same institution; the remainder of his Pathology residency was with the Medical Foundation in South Bend from 1973 to 1975. He then served a residency of Forensic Pathology with the Office of the coronor in Pittsburgh, Pennsylvania.

Dr. Malak, a board certified Pathologist, is an Assistant Professor of Forensic Pathology with the University of Arkansas College of Medicine. Dr. Malak is State Medical Examiner.

**DR. JOHN M. RANSOM**

Dr. Ransom was born in Bradford. He is a 1971 graduate of Arkansas State University and a 1975 graduate of the University of Arkansas College of Medicine.

Dr. Ransom served his internship at the University of Arkansas Medical Center. His residencies in General Surgery and Cardiovascular Surgery were also at the Medical Center. A fellowship in Cardiovascular Surgery followed.

A board certified Surgeon, Dr. Ransom is with the Division of Cardiovascular Surgery, University of Arkansas College of Medicine.

**DR. PEYTON E. RICE**

Dr. Rice was born in Little Rock. His pre-medical education was at Washington and Lee University, Lexington, Virginia. He was graduated from the University of Arkansas College of Medicine in 1975.

After an internship at Confederate Memorial Hospital in Shreveport, Louisiana, Dr. Rice served a General Surgery residency with St. Luke Hospital in Kansas City, Missouri. His Urological residency was with the University of Kansas Medical Center.

Dr. Rice's specialty is Urology. His office is located at 2000 Fendley Drive in North Little Rock.

**DR. ROBERT G. RIDOUT, III**

Dr. Ridout, a native of Dallas, received his pre-med education at the University of Texas in Austin. In 1973 he was graduated from the University of Texas Medical School at San Antonio.



## NEW MEMBERS

Dr. Ridout served his internship and a Radiology residency at Bexar County Hospital, University of Texas Medical School at San Antonio. From 1977 to 1979, he served a Nuclear Medicine residency with the University of Arkansas College of Medicine. He is board certified in Radiology.

Dr. Ridout is an instructor with the University of Arkansas College of Medicine Department of Radiology.

### **DR. DAVID H. ROBERTS**

Dr. Roberts was born in Hope.

In 1969, Dr. Roberts was granted a B.S. in Biology by the University of Central Arkansas. He is a 1973 graduate of the University of Arkansas College of Medicine.

Dr. Roberts' internship was at St. Vincent Infirmary. In 1976 he entered a Radiology residency with the University of Arkansas College of Medicine.

Dr. Roberts was a General Medical Practitioner for six months in Van Buren before completing his Radiology residency with the College of Medicine. In 1980, he was a Fellow of Pediatric Radiology with the University and Arkansas Children's Hospital.

As a board certified Radiologist, Dr. Roberts now practices Pediatric Radiology with Radiology Consultants, P.A., 1100 Medical Towers in Little Rock.

### **DR. LINDA L. SNYDER**

Dr. Snyder is a native of Little Rock and a graduate of Arkansas College at Batesville. She was graduated from the University of Arkansas College of Medicine in 1973.

After serving her internship at Mercy Hospital in Denver, Colorado, Dr. Snyder entered a Diagnostic Radiology residency at the University of Colorado Affiliated Hospitals.

Dr. Snyder is certified by the American Board of Radiology.

While in Denver, Dr. Snyder practiced with the Kaiser-Permanente Medical Group and was an instructor with the University of Colorado Medical Center. She is now an Assistant Professor of Diagnostic Radiology with the University of Arkansas College of Medicine.

### **DR. STEPHEN A. WHALEY**

Dr. Stephen Whaley was born in El Dorado.

In 1972, Dr. Whaley was granted a B.S. degree by South Arkansas University and in 1976 an

M.D. by the University of Arkansas College of Medicine.

Dr. Whaley's internship and Pediatric residency were with the University Hospital in Little Rock.

Dr. Whaley now practices with Pediatric Associates, P.A., 500 South University, in Little Rock.

### **DR. TING CHAO WONG**

A native of Taipei, Taiwan, Dr. Wong is a graduate of the National Taiwan University and the National Taiwan University College of Medicine.

In 1953, Dr. Wong entered an internship at Elizabeth General Hospital, New Jersey. From 1955 to 1958, he served an Obstetrical/Gynecological residency with Bellevue Medical Center, New York University, New York City.

Dr. Wong is certified by the American Board of Obstetrics and Gynecology. He is an Associate Professor of Obstetrics and Gynecology with the University of Arkansas College of Medicine.

\* \* \* \*

Washington County Medical Society has accepted two physicians to its membership:

### **DR. DAN M. RINER**

Dr. Riner was born in Pine Bluff. His pre-med education was at Henderson State University. Before entering medical college, Dr. Riner served with the United States Navy from 1962 to 1968. In 1973, he was graduated from the University of Arkansas College of Medicine. His internship was at the same institution.

From 1974 to 1975, Dr. Riner was a General Practitioner in Arkadelphia. He served a Diagnostic Radiology residency from 1975 to 1978.

Dr. Riner specializes in Radiology. His office is located at 609 West Maple in Springdale.

### **DR. STEVEN C. WILSON**

Dr. Wilson, a native of McPherson, Kansas, is a 1972 graduate of Central State University and a 1976 graduate of the University of Oklahoma School of Medicine.

Dr. Wilson's internship and residency were with the Northwest Area Health Education Center in Fayetteville. He is board certified in Family Practice.

Dr. Wilson, a Family Physician, is associated with Fayetteville Family Practice Clinic, 767 North Street. He is also a member of the AHCC clinical faculty in Fayetteville.



## OBITUARY

### DR. T. DUEL BROWN

Dr. Brown, a past president and life member of the Arkansas Medical Society, died March 19, 1981; he was born March 27, 1904, in Hamil.

A 1931 graduate of the University of Arkansas College of Medicine, Dr. Brown practiced Urology in Little Rock. During World War II, he served with the medical branch of the Air Force.

Dr. Brown was a diplomate of the American Board of Urology, and a fellow of the American College of Surgeons. He was a past president of Pulaski County Medical Society and the Arkansas Society of Clinical Hypnosis and a member of the International Society for Clinical Hypnosis. He was a member of the Immanuel Baptist Church, Randolph Masonic Lodge, Red Cross Chapter 46 of the Order of Eastern Star, Scimitar Shrine Temple and the Arkansas Consistory.

Dr. Brown is survived by his wife, Mrs. Lois Hamil Brown, and three daughters.



## Announcement

### FAMILIAL OVARIAN CANCER REGISTRY

There are increasing reports of ovarian cancer occurring in two (2) or more family members. The Familial Ovarian Cancer Registry will evaluate this increase to obtain information for genetic counseling to family members. Case accrual will evaluate:

- the number of cases of familial ovarian cancer
- the type of inheritance
- the relationship to breast and endometrial carcinoma
- the study of environmental, geographical and racial factors
- genetic counseling.

Please address inquiries regarding the clinical history of any family with two (2) or more members with ovarian cancer to:

Familial Ovarian Cancer Registry  
 M. Steven Piver, M.D.  
 Roswell Park Memorial Institute  
 New York State Department of Health  
 666 Elm Street  
 Buffalo, New York 14263  
 Telephone: (716) 845-3110

### October 1-3

*Natural Abilities and Perceived Worth: Rights, Values and Retarded Persons.* Twelfth Symposium on Philosophy and Medicine, Humanities Section, East Carolina University School of Medicine, Greenville, North Carolina. For further information, contact Loretta Kopelman, Ph.D., or John Moskop, Ph.D., Humanities Section, East Carolina University School of Medicine, Greenville, North Carolina.



## RESOLUTIONS



### DR. T. DUEL BROWN

WHEREAS, the membership of the Pulaski County Medical Society notes with sincere sorrow the passing from this life of one of its most revered members, T. Duel Brown, M.D., and

WHEREAS, his record of service to this organization is one of unselfish devotion for more than forty-five years, having served in countless positions of responsibility, including the Presidency of the Society in 1949; and

WHEREAS, his service to the Society was extended to the State level where he served as President of the Arkansas Medical Society; and

WHEREAS, the effects of his leadership will continue to benefit this Society for years to come.

BE IT THEREFORE RESOLVED:

THAT, this resolution be adopted as a token of our appreciation for Dr. Brown's life of service and as a sincere expression of sympathy to this family; and

THAT, this resolution be made a part of the permanent archives of this Society; and

THAT, a copy of this resolution be forwarded to the Journal of the Arkansas Medical Society for publication.

By Order of the Memorials Committee  
 Pulaski County Medical Society  
 H. Elvin Shuffield, M.D., Chairman  
 Henry Hollenberg, M.D.  
 Robert Watson, M.D.



# THINGS TO COME



## May 22

*Aspects of Aging II.* Veterans Administration Medical Center, New Orleans, Louisiana. 8:00 a.m. to 1:00 p.m. in the first floor Auditorium Room 1E12. Category I C.M.E. Credits. No registration fee. For further information, contact Dr. Daniel K. Winstead, Veterans Administration Medical Center, 1601 Perdido Street, New Orleans, Louisiana 70146.

## June 12-14

Arkansas Caduceus Club's 13th Annual Alumni Weekend. Ampitheater (Room 141 A & B) of the Education II Building, University of Arkansas for Medical Sciences Campus. For further information, contact Arkansas Caduceus Club, Box 114, University of Arkansas for Medical Sciences, Little Rock 72205, or call 501-663-1975.

## October 1-3

*Natural Abilities and Perceived Worth: Rights, Values and Retarded Persons.* Twelfth Symposium on Philosophy and Medicine, Humanities Section, East Carolina University School of Medicine, Greenville, North Carolina. For further information, contact Loretta Kopelman, Ph.D., or John Moskop, Ph.D., Humanities Section, East Carolina University School of Medicine, Greenville, North Carolina.



### ANSWER—Electrocardiogram of the Month

**DISCUSSION:** The ECG shows a regular narrow QRS complex tachyarrhythmia with a ventricular rate of about 190/minute. Spontaneous termination of the tachycardia is noted in aVR and V<sub>3</sub> and initiation of the arrhythmia is seen in aVF. Except where the tachyarrhythmia terminates, P-waves cannot be identified with certainty. ST depression is noted diffusely. This trace thus shows the salient features associated with paroxysmal atrial tachycardia. Carotid massage would be relatively contraindicated because of her bruits and eyeball pressure has been associated with retinal detachment. Hence, options B, C, E, F, and G would all be better choices for her therapy than would A and D.



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